SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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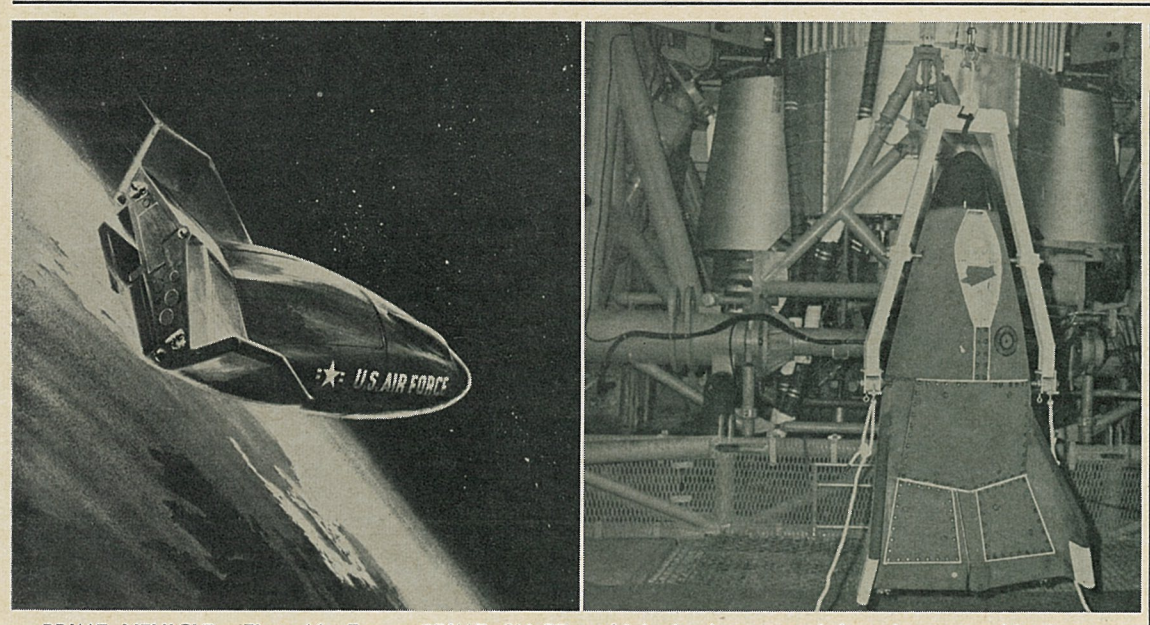


PRIME VEHICLE—First Air Force PRIME SV-5D vehicle is shown at right prior to positioning atop Atlas SLV-3 No. 7001 (background) at launch complex 3E at Vandenberg AFB. At left is artist's conception of craft in flight.

Convair Goals Set For 1967

Convair division objectives for 1967 were outlined last week by Jack L. Bowers, general manager, at meetings for all division supervisors.

The objectives include:

Quality — Achieve all space launches without failure or abort; eliminate significant incidents of damage or accidents in all division operations; improve quality by 20 per cent as measured by the Convair Craftsmanship program.

Management—Deliver all products on schedule; improve the safety record by five per cent and make it best in the Corporation; use "quick reaction operation" procedures; maintain an effective "Management Upgrade" program.

Economics — Make or exceed budgeted profit on all programs; exceed the budgeted cost reduction goal by $2 million.

New business — Win one new Centaur and two new Atlas missions; increase F-102 and F-106 business by 10 per cent; sell additional 600/640 aircraft conversions in the United States and abroad; maintain current performance on C-141 and C-5 aircraft programs; assume maximum assist roles on Fort Worth division's F-111 and Pomona division's anti-radiation missile (ARM) programs.

New programs—Maintain Convair as prime contender on VSX aircraft and advanced ICBM; win one new program, including research and development and hardware; begin one new proprietary program.

Bowers outlined significant events of 1966, including winning of the $40 million C-5 empennage subcontract; sale of five new Centaur vehicles for $15.5 million and successful demonstration of Centaur two-burn capability; winning of RMS-2, CENTCON, F-111 and ARM support, Hughes helicopter subcontract and Navy mines programs, and securing of new applications for the ocean buoy program.

The division exceeded projected profits and during the last six months had what Bowers described as a "distinct, healthy rise in employment." Sales for 1967 are expected to be about the same as for last year.

Bowers said developmental work will continue on AID, a new

(Continued on Page 2)

VE Efforts Called Key To Profitable Future

"Our ability to improve the effectiveness of our value engineering activities is our only real insurance of a successful and profitable future for the Convair division," W. L. Van Horn, Lindbergh Field operations plant manager, told those completing value engineering training at Lindbergh Field plant Dec. 9.

"We have to have a value engineering program to exist in today's aerospace world, and the caliber of our competition requires that it be effective!" he continued.

He pointed up the two purposes of value engineering workshops at Convair: to create critical value analysis attitudes and work habits; and to apply these attitudes and habits to the daily job.

"In spite of the remark, heard over and over—'do it right the first time,' you can always do any job better if you work at it."

Col. James Ourand, DCAS Plant Representative, also at the closing session, voiced his agreement on the vital importance of value engineering by pointing out that "DCAS (Defense Contract Administration Services) is vitally interested in any savings achieved in military programs—savings in weight, time, as well as cost."

Four Air Force officers, based at Convair with the AF "Education-with-Industry" program, were among workshop attendees. They were Maj. J. W. Craver Jr., Maj. L. J. Rowin, Capt. L. P. Corbett, Capt. J. K. Moyer.

Teams evaluated the Standard ARM adapter breech assembly, F-111 pylon pivot beam, F-111 jettison group relay mounting chassis, F-111 forward fixed and pivot pylon support, landing mat panel assembly, F-111 aircraft monitor and control group relay assembly, external tank low level fuel switch container, oceanographic buoy masthead and antenna.

Team reports estimated that as much as $600,000 might be saved if all eight projects were implemented.

Two more value engineering workshops, at least, will be scheduled this year, one at each Convair plant, E. A. Lindem of educational services who coordinates the seminars, said.

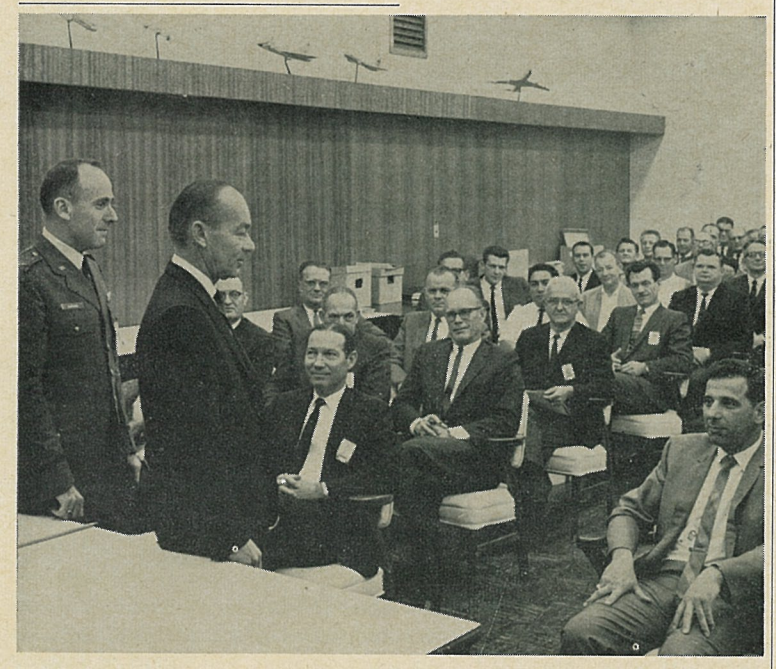
Following are team members, departments, and project leaders:
Team No. 1—Capt. L. P. Corbett

(Continued on Page 2)

Heller Teaching VE University Course

E. D. Heller, manager of cost reduction and value control for Convair division, is teaching a nine-week University of California Extension course in value engineering from 7 to 10 p.m. Mondays at Roosevelt Junior High School, Room 304. The first session was held this week.

The lecture course augments training provided in Convair division VE workshops and may be taken by any interested individual. For additional information, phone Heller at KM ext. 2467 or at his home, 465-9482.



VE WORKSHOP—Col. James Ourand, DCAS Plant Representative, and W. L. Van Horn, Convair Lindbergh Field plant manager, laud value engineering program at concluding session of Nov. 28-Dec. 9 VE workshop at Lindbergh Field plant.

Atlas Launches PRIME Re-Entry Craft in Space

First of four Air Force PRIME SV-5D wingless lifting-body "maneuverable spacecraft" was lifted into space last month by Convair division's Atlas SLV-3 No. 7001 from Vandenberg AFB for its re-entry flight down the Western Test Range.

Howard M. Bonesteel of Dept. 950-3, PRIME program manager for Convair, said the Atlas, under control of Convair-developed guidance equations, rocketed the spaceship to desired position and released the spacecraft toward the earth at hypersonic speed with precision.

The flight marked the 22nd consecutive successful Atlas space vehicle launch and provided the first actual flight test for the new interstage adapter and shroud developed by Convair for the PRIME program.

Down-range flight of the SV-5D also was well within desired tolerances although technical difficulties at the end of the flight made recovery of the spacecraft impossible.

The PRIME (Precision Recovery Including Maneuvering Entry) project, managed by the Air Force Space Systems Division, is the second phase of the Air Force's START (Spacecraft Technology and Advanced Re-Entry Tests) program.

Object of the PRIME project is to test new developments in space hardware and advance technology for development of possible future manned and unmanned lifting-body vehicles which could operate like spacecraft in orbit and fly and maneuver like aircraft in the atmosphere.

The PRIME vehicle weighs less than 900 pounds and is wedge-shaped with a near-flat bottom, rounded nose and top surface and short, vertical tail fins.

After being separated from the

(Continued on Page 2)

Mgt. Club to Hear 'Convair Future' Talk

E. R. Peterson, Convair vice president of research and engineering, will give Convair Management Club members "A Look at Convair's Future" at their Jan. 18 meeting.

The dinner meeting will be held at 5:45 p.m. at the Balboa Park Club. Price will be $2 for spaghetti and meat balls, and beer.

Tickets may be purchased now from Management Club Boosters at all plant locations.

S-C Club Members Will View Films

Stromberg-Carlson Management Club members at San Diego will have a chance to "take a look at themselves" through impetus of personal improvement films prepared by the National Management Association which will be seen at the Jan. 19 meeting.

The monthly meeting will be held at the MCRD Officers' Club with cocktail hour to start at 6 p.m. Dinner will be served at 7.

Dinner tickets at $3.50 each are on sale by all departmental representatives at Data Products.

Atlas-Centaur Chosen by NASA For New Tasks

Atlas-Centaur vehicles have been chosen by NASA for launch of Orbiting Astronomical Observatory and Applications Technology Satellites beginning in 1968.

The OAO and ATS spacecraft had been scheduled for launch by Atlas-Agena vehicles but NASA officials said the more powerful Atlas-Centaur combination has been substituted for greater performance.

"Use of the Atlas-Centaur for this class of launches also will increase the efficiency and economy of NASA launch operations at Cape Kennedy," a NASA spokesman said.

Switch of the OAO and ATS payloads to Centaur will mean a phase-out of NASA's use of Atlas-Agena in 1968 at Cape Kennedy after 26 missions. Remaining launches in which the Atlas-Agena will be used before the phase-out will have ATS, Orbiting Geophysical Observatory, Mariner and Lunar Orbiter payloads.

Grant L. Hansen, Convair vice president-launch vehicle programs, said three Centaur vehicles currently under contract are expected to be designated for OAO and ATS launches.

(Continued on Page 2)

Two 'Groups' Created Within GD Headed by Sargent and Graham

Creation of an Electronics and Industrial group, within General Dynamics, composed of Stromberg-Carlson, Electronics division, and General Atomic division, was announced last month by Roger Lewis, GD president.

John Graham is group vice president with Dause Bibby, Parker Painter and Frederic de Hoffmann reporting to him. Graham reports to Lewis.

John Graham | John Sargent

At the same time, Lewis announced creation of a Materials group, made up of Material Service division, Marblehead Lime Co., Freeman Coal Mining Corp. and Liquid Carbonic division. In addition to his present duties as Corporate vice president-finance, John A. Sargent has assumed responsibilities as group vice president, with Patrick H. Hoy, M. James O'Brien, Frank Nugent and John A. Edwards reporting to him.

Graham **(GD/NEWS, May 18, 1966)**, formerly a vice president of International Telephone and Telegraph, as well as Curtiss-Wright Corp., joined General Dynamics last year as a Corporate vice president. His background includes 20 years in aerospace and electronics.

Sargent **(GD/NEWS, Mar. 11, 1964)** joined General Dynamics three years ago as senior Corporate financial officer and also a member of the Board of Directors. He formerly was executive vice president of General Foods Corp.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Jan. 1 and Jan. 15.

Thirty-year: Dept. 031-0, J. D. Power; Dept. 149-0, Edgar Caldwell; Dept. 401-5, J. L. Williamson.

Twenty-five year: Dept. 027-0, A. I. Cox; Dept. 031-0, Billy Luffe; Dept. 041-0, M. M. McCaskey; Dept. 059-3, R. H. Browning; Dept. 123-0, W. F. Strasburg; Dept. 140-1, L. I. Fredrickson; Dept. 144-1, F. L. Miller; Dept. 400-1, A. W. Hall Jr.; Dept. 401-1, A. V. Benesch; Dept. 420-1, F. D. Weismantel; Dept. 451-0, Jerry Kudrna; Dept. 454-0, G. L. Olson; Dept. 566-1, W. J. Wood; Dept. 732-0, V. A. Contreras, A. A. Gomez; Dept. 820-0, P. H. O'Dell; Dept. 835-5, R. C. Zinser; Dept. 964-2, T. A. Bridges.

Twenty-year: Dept. 400-5, D. B. Tucker; Dept. 511-1, R. H. Wasilewsky; Dept. 511-4, C. E. Dietz; Dept. 578-0, P. T. Gardner; Dept. 756-0, J. T. Epperly, H. C. Hetrick; Dept. 833-2, F. J. Light; Dept. 835-4, Joseph Boyd; Dept. 985-1, J. W. Boorom.

Fifteen-year: Dept. 001-0, A. E. Sanchez; Dept. 015-0, C. H. Ross, D. R. Wilson; Dept. 027-0, A. A. Baker; Dept. 031-0, E. L. Gullette; Dept. 057-0, D. R. Maxion; Dept. 130-1, D. E. Goff; Dept. 141-3, H. C. Cox; Dept. 149-5, Violet H. Koivisto; Dept. 191-0, Verna S. Hathaway; Dept. 193-3, Bernice C. Jones; Dept. 250-4, Herbert Whitmore; Dept. 250-6, Alphonso Sly; Dept. 403-2, F. L. Erwin.

Dept. 460-0, Lola B. Stacy; Dept. 533-1, H. M. Stocker; Dept. 550-0, B. W. Bostad, E. R. Woods; Dept. 566-2, W. F. Brassell; Dept. 572-3, Peter Whisler; Dept. 744-0, W. R. Poulton; Dept. 800-0, Lois M. Quam; Dept. 833-2, J. A. Chavez, F. L. Dewey; Dept. 834-2, D. N. Van Epps; Dept. 835-1, J. J. Borrego; Dept. 841-0, M. A. Shamhart; Dept. 954-0, L. A. Chambers; Dept. 954-4, E. W. Manning; Dept. 963-4, Bertha T. Davis, Terry Nishida; Dept. 963-9, Maurice Tompkins; Dept. 964-2, Dorothy J. Page; Dept. 987-0, Robert Gordon, R. J. Pixley; Dept. 985-1, W. T. Mitchell.

Ten-year: Dept. 031-0, E. J. Flint Jr.; Dept. 057-0, R. S. Baldwin; Dept. 059-1, R. K. Bond; Dept. 113-0, W. E. Smith; Dept. 123-0, Roberta Reed; Dept. 124-0, D. W. Berry; Dept. 125-0, C. H. Blevins, E. H. Boldrick, V. G. Heger; Dept. 130-1, C. L. Ray, F. L. Thames, J. P. White; Dept. 141-3, G. T. Collins; Dept. 142-1, Vojislav Sekulovic; Dept. 143-3, Vivian C. Peterson; Dept. 144-2, D. H. Fischer.

Dept. 149-4, Clarence Kirkpatrick; Dept. 170-2, Anna E. Jaggar; Dept. 191-0, Jo Bobby Corn; Dept. 195-0, Virginia H. Porter; Dept. 250-0, F. B. McIntyre, J. J. Van Daele; Dept. 250-1, M. L. Lodge, J. L. Redman Jr.; Dept. 250-3, R. F. Mutsch; Dept. 454-0, Cherrel F. Strickland; Dept. 460-0, Beatrice M. Harman; Dept. 521-6, Alma M. Anderson, Palmera S. Landrum; Dept. 532-1, G. D. Smith, Sueo Tanabe; Dept. 545-4, E. G. Saylor.

Dept. 562-2, D. G. Boyer; Dept. 565-1, H. P. Ebert; Dept. 583-0, C. J. Cohan; Dept. 591-0, J. M. Maughmer; Dept. 595-0, J. A. Doggett; Dept. 756-0, R. C. Hurst, R. C. Greene; Dept. 780-1, Olivia M. Bell, Reva B. Davis, Hilda P. Kramer, Ethel J. Owens; Dept. 780-2, Roger W. Marx, J. A. Pendergraft Jr.; Dept. 780-4, Dorothy M. Hlavac, Jean R. Lewis; Dept. 840-0, D. O. Berhow; Dept. 950-1, F. W. Major; Dept. 950-6, Rudolph Romero; Dept. 957-2, Margaret R. Olson; Dept. 963-9, W. J. Jankowski; Dept. 967-3, M. A. Treece; Dept. 969-2, R. W. Eberhardt; Dept. 972-0, H. F. Brown; Dept. 985-1, R. L. Cockrum; Dept. 985-3, W. L. Johnson, H. F. Massey, E. R. Schwabel; Dept. 985-4, W. H. Teter; Dept. 988-5, H. Y. Jow; Dept. 988-9, W. A. Eaton.

ELECTRONICS-SD

Service emblems due during the month of January.

Fifteen-year: Dept. 80-20, M. F. Brawner; Dept. 85-60, H. B. Cody.

Ten-year: Dept. 84-11, P. H. Nelson; Dept. 86-10, L. A. Broekemeier; Dept. 86-21, L. R. Boyd, A. R. Hanslow, H. G. Murk; Dept. 88-10, D. E. Johnson.

Invention Disclosures

CONVAIR

HANNA—J. W., Dept. 961-2. Locking Terminal.

HEMPHILL—T. M., Dept. 561-0. Unfurlable Paraboloid Antenna or Multi Element Phased Array.

O'CARROLL—M. L., Dept. 578-5. High Conductance Vacuum Valve for Use Inside a Vacuum System.

Rider-Driver

CONVAIR

RIDE WANTED—From E. Mountain View and Adams Ave. to Lindbergh Field plant, 7:30 a.m. Call Nora March, ext. 753, LF.

Births

RICHARDSON — Daughter, Theresa Gayle, 7 lbs., 12¼ oz., born Nov. 30 to Mr. and Mrs. T. G. Richardson, Dept. 551-4.

SIMMONS — Daughter, Kathryn Yvonne, 7 lbs., 10½ oz., born Dec. 4 to Mr. and Mrs. Eugene Simmons, Dept. 733-0.

Deaths

SEVERSON — Laverne, Dept. 951-4. Died Dec. 28. Survived by parents, Mr. and Mrs. Peter S. Severson, and a sister in Rockford, Ill.

WHATLEY—Beverly L., Dept. 191-0. Died Dec. 5. Survived by husband, John, and father.

ELECTRONICS-SD

PETERSON—George M., Dept. 4072. Drowned in San Diego Bay Dec. 11. Survivors include his father, Earl; a brother, Eugene, and two sisters, including Ruth of San Diego.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Dec. 9.

Dept. 002, H. B. Bender; Dept. 015, L. K. Lee, A. Reiter, E. Woods; Dept. 031, R. E. Bowman, A. A. Martin (two awards); Dept. 123, H. G. Peltier; Dept. 130, B. J. Jones; Dept. 141, R. Hughes, H. G. Warner; Dept. 143, R. S. Killgore; Dept. 144, R. Forshey (two awards), S. G. Jenkins, G. T. Lizon, P. Plus (two awards), A. R. Townsend, E. M. Walker; Dept. 149, R. H. Brent; Dept. 420, J. A. Kujawa; Dept. 566, W. W. Craft; Dept. 733, C. W. Maxfield; Dept. 780, J. H. Waller; Dept. 833, B J. Thomson; Dept. 955, J. Wendling; Dept. 957, J. A. Madden; Dept. 964, J. P. Nichols; Dept. 972, R. L. Robinson, S. S. Stearns, R. H. Steinberg; Dept. 979, A. Majaika; Dept. 987, M. S. Dace. L. M. Hernandez, R. A. Jacobs, L. A. Marine (two awards), J. L. Miller, H. R. Short, L. Spurgeon.

Employe Suggestion awards approved for the week ending Dec. 16.

Dept. 123, D. Pierce; Dept. 130, J. B. Harrison; Dept. 142, C. L. Cheves; Dept. 143, J. S. Adams (two awards), G. T. Lizon; Dept. 144, N. J. Belik (two awards); Dept. 149, W. W. Graham, G. E. Ream, G. F. Wilson; Dept. 195, M. E. Percival; Dept. 400, A. W. Hall; Dept. 524, M. I. Potterton; Dept. 732, J. K. Pueschel; Dept. 733, R. E. Reeves (two awards); Dept. 744, F. G. Crosthwaite; Dept. 756, J. W. Reynolds; Dept. 759, E. Ford; Dept. 832, L. H. Bracken, E. M. Christensen; Dept. 860, H. C. Leppart (two awards); Dept. 959, H. H. Mishler; Dept. 972, F. E. Smalley; Dept. 979, M. F. Nicodemus Jr.; Dept. 987, T. A. Cooksey, P. E. Grasmick, H. I. Greenwood (three awards), R. A. Jacobs, J. F. Mayer, C. W. Neal (three awards), S. Stearns.

Personals

CONVAIR

I wish to thank our Convair friends for the flowers and expressions of sympathy at the death of my husband.

Mrs. William Saffold.

* * *

The family of Hedi Takeshita wishes to express thanks and appreciation for your sympathy during our time of bereavement. Your friendship as manifested in your many kindnesses gives us encouragement.

Jane Takeshita
Dept. 966-0

* * *

My son, Bill, my daughter, Colleen, and I wish to thank our many Convair friends for their expressions of sympathy, flowers, and contributions to the Heart Fund following the recent death of my wife, Lucille "Cindy" Lara.

Ernie Lara
Dept. 250-5

* * *

Your kindness and sympathy following the death of my wife, Beverly Whatley of Dept. 191-0, will always be remembered with deep gratitude. You have helped lighten our sorrow and we appreciate this more than words can express.

John R. Whatley

* * *

I wish to thank our many Convair friends for the beautiful floral offerings and words of sympathy following the death of my daughter, Darlene, on Dec. 9.

Elsie Krauth
Dept. 521-6

* * *

Please extend my sincere appreciation and thanks to Convair Management Club, the industrial relations department, the safety office staff and other Convair friends for the beautiful flowers and get well wishes received during my recent hospitalization.

Richard Schulz
Dept. 130-8

Retirements

CONVAIR

BORCHERT—Carlton F., Dept. 597-1. Seniority date Oct. 25, 1954, retired Oct. 16.

CARNEY—Lester Jr., Dept. 015-0. Seniority date Nov. 11, 1946, retired Nov. 30.

COPPOLA—John F., Dept. 143-2. Seniority date Aug. 10, 1956, retired Oct. 16, 1966.

DANIELSON—Inez M., Dept. 101-6. Seniority date May 19, 1948, retired Nov. 30.

GUNTHORP—Cecil H., Dept. 870-1. Seniority date May 14, 1959, retired Nov. 13.

HOOD—James C., Dept. 832-4. Seniority date July 8, 1960, retired Oct. 17, 1966.

JOLLIFF—Alfred T., Dept. 250-2. Seniority date Aug. 25, 1950, retired Nov. 30.

KENNEY—William W., Dept. 964-2. Seniority date Aug. 27, 1947, retired Nov. 30.

LEWIS—Glenn E., Dept. 142-1. Seniority date Jan. 23, 1956, retired Dec. 16, 1966.

MacLEOD—John W., Dept. 801-0, Seniority date Dec. 4, 1961, retired Dec. 11, 1966.

MARTIN—Ernest W., Dept. 462-0. Seniority date Jan. 29, 1959, retired Nov. 13, 1966.

MITCHELL—Andrew G., Dept. 130-1. Seniority date Nov. 11, 1946, retired Nov. 17.

PRATHER — Robert L., Dept. 401-1. Seniority date Jan. 22, 1952, retired Oct. 16.

TOWNSEND—Orletta G., Dept. 833-1. Seniority date July 6, 1959, retired Oct. 16, 1966.

VARNER—John I., Dept. 310-0. Seniority date Jan. 6, 1959, retired Oct. 2.

WAISLOW—Leo P., Dept. 832-3. Seniority date Sept. 25, 1953, retired Nov. 18.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Lindbergh Field, ext. 491. Bldg. 14 auditorium, Wednesday, Jan. 11, 4:30 p.m.; Tuesday, Feb. 7, 8 a.m. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, Mondays, Jan. 23 and Feb. 6, 8 a.m.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931, Kearny Mesa.

JUNIOR COLLEGE SPRING SEMESTER—Job related and trade extension courses may be held on company premises. Interested persons should send an AVO now to Richard Forrest. Mail Zone 130-30 KM. Course suggestions: Blueprint reading, design drafting, elements of structural design, electronics (several), industrial safety, introduction to digital computers, mathematics (electronics, technical or shop), transistors (basic and advanced), technical writing, supervision, and many others.

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Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Atlas-Centaur Chosen by NASA

(Continued from Page 1)

"We anticipate additional Atlas-Centaur vehicle procurement for follow-on missions," he said.

The Centaur, first rocket to use liquid hydrogen fuel, is capable of launching about 40 per cent greater payload than Agena for earth orbit and about three times greater payload for lunar trajectory.

Centaur also is being considered by NASA as upper-stage vehicle for still more-powerful launch vehicles in the 1970s.

Hansen said Convair's Atlas and Centaur vehicles will be used in about 40 launches this year at the Eastern and Western Test Ranges.

Included will be launches for Surveyor, Lunar Orbiter, Mariner (Venus fly-by), ATS and a number of Air Force missions.

Hansen said the division will begin work this year on an improved version of Centaur.

Launch of the first of the division's two new "longer" Atlas booster vehicles, the SLV-3C, also is scheduled.

The first SLV-3C, No. 5901, will be used in the Atlas-Centaur 13 flight to send Surveyor-E toward the moon.

Scheduled for later launch is the first SLV-3A, No. 5602-A, as booster for Orbiting Geophysical Observatory-E.

"These new vehicles, with increased fuel capacity and uprated performance capability, will help insure a long life for Atlas as a booster in the nation's space programs," Hansen said.

Atlas and Centaur vehicles were used in 47 launches last year. At year's end, the division had a record of 22 consecutive successful Atlas space vehicle launches.

Atlas Launches PRIME Re-Entry

(Continued from Page 1)

Atlas, the spacecraft reaction jets and hydraulic flap controls are actuated and maintain required altitude during the ballistic phase of flight and through re-entry maneuvering into the earth's atmosphere.

While passing through the atmosphere, the craft is subjected to temperatures up to 4,000 degrees Fahrenheit. A special heat shield covers the vehicle, except for the nose cone and moveable flaps, which are temperature-resistant.

Atlas SLV-3 No. 7002, booster for the second PRIME flight, has been erected at Space Launch Complex 3E at Vandenberg. Its interstage adapter is to be mated and the re-entry vehicle positioned within the next few days.

Convair builds the interstage adapters and subcontracts construction of the shrouds used to cover the PRIME vehicles during launch.

H. L. Obertreis is PRIME ground systems, booster vehicle and launch operations coordinator for Convair and James L. Minos is in charge of design, testing and production.

VE Efforts Key to Future

(Continued from Page 1)

(USAF), B. C. Davis (016), G. A. Dethier (531-2), E. B. Fountain (002), A. E. Jones (031). C. B. Wells, project leader.

Team No. 2—J. F. Ames (045), W. J. Gibson (016), R. N. Moxley (015), Capt. J. K. Moyer (USAF), E. B. Potter, (961-8). M. C. Bayer, project leader.

Team No. 3—W. A. Glaubius (588-1), H. F. Horan (024), C. W. Johnson (002), J. C. Roby (511-2), R. J. Wadginski (566-3). Bayer, project leader.

Team No. 4—Maj. J. W. Craver Jr. (USAF), H. A. Hansen (059), C. L. McLaughlin (511-1), V. R. Rocco (015). R. B. Thompson, project leader.

Team No. 5—R. K. Bond (059), D. W. Ingram (031), Len Palm (533-1), W. K. Richeson (001), E. C. White (130-3). Thompson, project leader.

Team No. 6—C. E. Dietz (511-4), J. M. Norman (146-4), Coleman Smith (533-2), B. N. Waite (015), T. F. Ryan (830). Thompson, project leader.

Team No. 7—A. G. Blakey (149), W L. Eckhart (532-1), T. O. Sather (015), B. A. Shourds (031), F. G. Brickson (543-5). Wells, project leader.

Team No. 8—R. J. Collette (031), G H. Parker (019), Paul Perrero (015). Maj. L. J. Rowin (USAF), Azael Uranga (545-5). Bayer, project leader.

★ Did You Know? ★

(General Dynamics people enjoy numerous advantages and high on the list are those usually referred to as "employe benefits." There are many of them, each designed to complement the others and together form a balanced program for the welfare of the individual. As a reminder, GD/NEWS will carry a series of brief articles touching upon first one benefit and then another. Some, perhaps, you may not have known existed.)

★ ★ ★

Convair, Electronics-SD, and Stromberg-Carlson in San Diego pay the entire premium for $10,000 worth of life insurance for salaried employes and $5,000 worth for hourly employes. Additional group life insurance is available through the Company with the amount based on salary or hourly rate.

Employes with both basic and optional life insurance have an accidental death and dismemberment benefit equal to one-half the total for salaried employes and $5,000 for hourly employes. Salaried employes may supplement their group term life insurance with a cash value plan that pays double face amount for accidental death before age 60 and with a high-limit group accident plan providing benefits for loss of life, limbs, or sight.

Benefits for both these plans are paid for death or loss resulting directly from and within 90 days of the accident. Inquiries may be directed to employe services.

Convair Objectives for 1967 Cover Wide Range of Effort

(Continued from Page 1)

application for ducted-fan vehicles, and predicted strong potential for LALO and PEEK, both of which also use ducted-fan concepts.

The Navy mines project was cited as an example of current programs with considerable follow-on sales potential and the Hughes helicopter subcontract as another type of "sustaining effort to support our sales base and factory operations."

Bowers said modernization of factory and engineering facilities, primarily for support of C-5 and F-111 work and future programs, will make 1967 one of the heaviest facility acquisition periods in the division's history.

"We have a good future," he commented. "We are going to be striving for perfection."

Bowers urged all supervisors to work with employes under their direction in constantly striving to meet the division objectives and said the objectives should be "tied in" with the division's expanding "management upgrade" program for maximum usefulness and effectiveness.

Centaur Test Operations Wins Craftsmanship For November

Centaur test operations Dept. 974 won Convair "Craftsmen of the Month" honors for November by improving performance by approximately 70 per cent.

Members of the department reduced defects from .11 per 100 manhours for the past six months to .37 per 100 manhours for the last three months, giving them the top quality index rating for the month at 121.0.

The win was the third for the department and each employe has been presented a silver Craftsmanship pin. Thomas A. Hutchinson, supervisor, accepted the third seal for the department's Craftsmanship plaque in an awards ceremony last month.

Runner-up departments in the November competition, both at Kearny Mesa, were Combined Systems Test Stand, Dept. 973, with a 115.9 quality index, and purchase orders, Dept. 800, with a 115.3 index. CSTS had won the October competition.

Jack L. Bowers, Convair general manager, in presenting the October and November awards last month, said the division has established a goal of 20 per cent overall quality improvement, as measured by the Craftsmanship program, for 1967.

KEOUGH TO HEAD SD SIERRA CLUB

N. R. Keough, Convair manager of experimental department, takes over this month as 1967 chairman of the San Diego Chapter of the Sierra Club, national conservation organization. He will assume his new post at the Jan. 20 meeting.

CRAFTSMANSHIP HONORS—Jack L. Bowers, Convair division general manager, recently presented Convair Craftsmanship awards for October to Dept. 973, Combined Systems Test Stand at Kearny Mesa (top photo) and for November to Dept. 974, Centaur test operations at Kearny Mesa (bottom photo). Supervisors accepting award seals were Gerry G. Christ for Dept. 973 and Thomas A. Hutchinson for Dept. 974.

Boost in Bond Buying Earns Treasury Praise

Results of General Dynamics' efforts in 1966 to increase employe purchases of U.S. Savings Bonds by payroll deduction drew praise last month from Howard Smith, New York State director, Treasury Department, Savings Bonds Division.

In a letter to Roger Lewis, General Dynamics president, Smith wrote: "It was indeed a highly successful campaign, achieving more than 20,000 new savers for an overall Company participation of 63 per cent.

"The Treasury is most appreciative of your personal support of this program . . . and we also want to particularly commend the key officials who directly participated in the planning and execution of this campaign, including Algie A. Hendrix, E. C. McManus and Dave Smith (of Corporate Headquarters) who did such excellent work.

"We note with special interest the fact that your three largest units: Electric Boat, Convair and Fort Worth divisions . . . achieved better than two-thirds participation. Especially notable also are the achievements of Electro Dynamic . . . and Corporate Headquarters which achieved 90 and 87 per cent respectively.

"I know that Secretary Fowler will be very interested in the results you have achieved."

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers among General Dynamics divisions. In parentheses are dates when individuals joined the company.)

DAVID F. JENKINS (1959) from Convair division to planning control, Electronics, Rochester; **WOODROW WILSON** (1966) from Electronics, Rochester to Quincy division; **HERBERT G. BARNES** (1946) from Electronics, San Diego to manufacturing control coordinator, Convair; **PAUL F. WEYERS** (1963) from Pomona to Convair as engineering staff specialist; **WALTER EGLI** (1955) from Convair to General Atomic; **RODERICK H. JOHNSON JR.** (1960) from Convair to design specialist, Stromberg-Carlson Data Products; **FELIX A. BROWN** (1940) from Convair to Pomona as assistant foreman; **WILLIAM S. HOLDERBY** (1966) from Convair to Electronics, San Diego, as electrical field test technician; **SUMNER B. HARKEY** (1956) from Electronics, Rochester to design engineer, Electronics, San Diego; **IRA M. SWAIM** (1956) from Convair to 111 logistic support supply, Fort Worth; **DEE S. MADSEN** (1959) from Convair to outside production, Fort Worth; **ANDREW J. AUGUSTENBORG** (1939) from Convair to Fort Worth.

Pacific Western Airlines Pilots, Crews Drill on 640

Convair customer service representatives are conducting ground school training for Pacific Western Airlines pilots and maintenance crews in anticipation of delivery of Convair 640s early this year.

The Canadian airline has purchased four of the updated Convair transports, powered with Rolls-Royce Dart engines. Modification is being done at the Convair Service Center in San Diego. Delivery schedule calls for the first to go to PAC Western in mid-February, two in March, and the fourth in April.

Don Maxion, regional field service representative, and W. C. Robinson, service engineer, completed a ground school for pilots at Vancouver, B.C., and now are conducting a maintenance course for PAC Western ground crews at the Vancouver base of operations.

A second ground school for pilots will be held at the same location Jan. 25 to Feb. 3.

Next month the Convair representatives will go to Edmonton to continue the training there. A maintenance ground school will be held Feb. 6-24, and a pilots' ground school, Feb. 6-15.

Maxion will be based at Vancouver the next few months in support of PAC Western's 640 operations, according to Roy Sommers, chief of Convair field service.

Army Orders More Radio-Teletypewriter Communication Units

Initial funding of $2,594,312 under a letter contract for 325 radio-teletypewriter communications shelters has been awarded to Electronics division, Rochester, Parker Painter Jr., general manager, reported.

This is the second order for these shelters placed by the U. S. Army Electronics Command. A $4,686,700 letter contract for 293 communications shelters was awarded in August. The systems will be built at the Newark, N.Y., Operations of the division.

Called an AN/GRC-142, the radio-teletypewriter system fits into a shelter that mounts on a ¾-ton truck. General Dynamics will supply the AN/GRC-106 radio and the MD-522 modulator-demodulator for teletypewriter and voice operation, both of which are made in the Rochester plant.

RELIABILITY LEADERS—Members of General Dynamics' Panel on Reliability met last month in San Diego. P. I. Harr, Corporate director of reliability, quality control and value control, was chairman. Theme was "Systems/Cost Effectiveness." Separate sessions were scheduled for panels on reliability, metrology, systems safety, value control, maintainability and quality. Jack L. Bowers, Convair division general manager, spoke at a dinner meeting and L. I. Medlock, Convair director of reliability control, was host. A General Dynamics' Motivational Task Team held two-day concurrent meeting.

MOONSCAPE—One of high-resolution photos taken by Lunar Orbiter 2 shows details of crater Copernicus on moon. NASA officials have congratulated Convair for "outstanding effort" in support of the Lunar Orbiter launch.

'Hybrid' F-111 Faces Severe Testing To Verify Structural Integrity

A "hybrid" F-111, constructed of the major components of both Air Force and Navy F-111 versions, is now in structural testing at the huge Convair structures test laboratory in San Diego in a program for Fort Worth division.

The Convair structure test lab will conduct static and fatigue tests to verify structural integrity of the F-111 in accordance with military specifications for both the Air Force and Navy. The program will extend into 1970.

Although the Air Force and Navy versions of the F-111 are 83 per cent "common," the design requirements for some airframe components differ. The hybrid configuration of the static test airframe will permit testing for the most critical requirements of each version, and the results will be reciprocal.

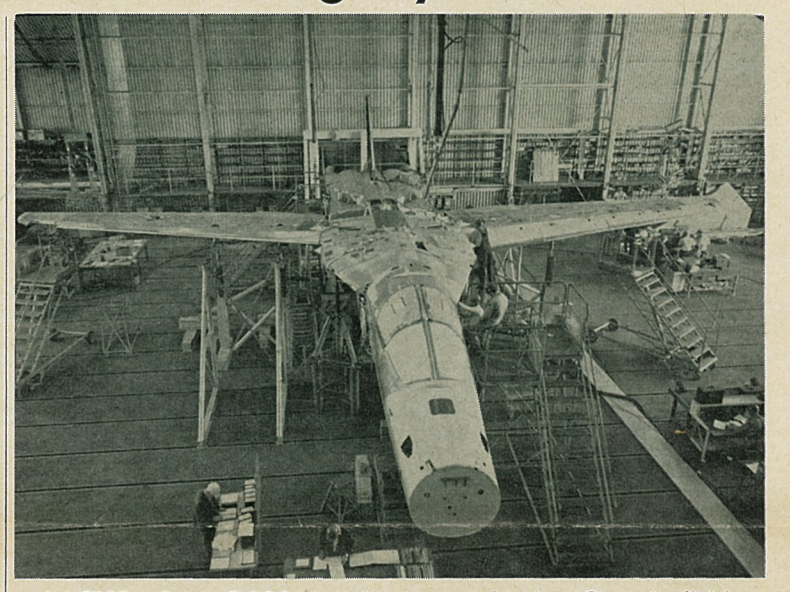
The static test plane arrived, disassembled, at San Diego in October and went into the first phases of the static test program the last of November. The static test series consists, first, of tests to design ultimate loads for approximately 78 conditions, including some under elevated temperatures to cover the effects of aerodynamic and engine heating.

Drop tests will be conducted for final sizing of landing gear metering pins, for structural qualification, and for demonstration of landing gear servicing.

Final tests will consist of loading to failure in selected conditions, including drop tests to failure.

A second test article, probably an AF version, will go into the fatigue test program later this year. Fatigue testing will consist of cyclic loading to a spectrum of various conditions and load levels to simulate four aircraft service lifetimes.

Both airplanes will be heavily instrumented for recording strains, pressures, and — in the case of the static test plane — temperatures and deflections. Most data will be processed in the Convair digital computer at the Kearny Mesa plant.



IN TEST—Static F-111 test plane, assembled at Convair division, stands in fixtures in huge structural test laboratory at San Diego, as it goes into extensive test program to prove out structural integrity. Another F-111 test article will start fatigue testing late this year.

The San Diego-based facility was chosen for the F-111 structural test program because it is, in itself, a complete fixture. The 100x200-ft. building is constructed so that loads can be applied from floor, roof, and walls, eliminating the bulk of jig work which otherwise would be required.

Electronically-controlled heat and load programming systems, and the data acquisition and interpretation system for high speed collection of data from hundreds of transducers are of the most advanced type. The load programming system was improved early last year with installation of additional control channels which can handle a large-scale test requiring a great number of hydraulic cylinders. As much as three million watts of electricity is available for continuous heating through the facility's independent electrical power system.

Engineers have spent the last two years preparing for the extensive F-111 test program. Design of test fixtures and setups was particularly demanding because of the peculiar problems associated with the advanced design of the F-111. For instance, the plane's variable sweep wing requires both static and fatigue tests to be conducted at various wing sweep angles, necessitating special fixture adjustments; and new-type tension pads had to be developed because of the high loads which must be applied at extremely high temperatures.

The dummy engines had to be constructed strong enough to act as jigs to apply loads and, in addition, had to be built to simulate the real engine dynamically to produce proper responses during drop testing — to mention a few of the challenging aspects of the program.

The structural test program at Convair is under the direction of E. F. Strong, in charge of the structures test laboratory at the Harbor Drive Test Site. Ed Schiff is group engineer responsible for test engineering and Dean Whitney is group engineer in charge of test measurements.

At Fort Worth division, the entire F-111 flight and ground testing program is under W. N. Stevenson, senior project engineer, with Harold T. Johnson, assistant project engineer, and V. H. McDaniel, group engineer, monitoring the current test program.

E. M. Propper is chief of structural test programming and J. E. Hejl, group engineer in charge of structural ground test programming.

Walter Paquette, Fort Worth assistant project engineer, is assigned to Convair as resident engineering representative throughout the structures test program.

Population of GD Goes Over 90,000

General Dynamics' total population, climbing steadily during the last half of 1966, went over the 90,000 mark in October and by Dec. 1 stood at 91,057.

This compares to a total of 84,025 at the beginning of the year, reflecting an increase of 7,032 employes, or 8.4 per cent.

Among divisions showing large increases over the first of the year were Fort Worth, adding about 5,000, Canadair and Electronics, up about 1,000 each.

How to Build a Missile Submarine: A report from General Dynamics

REQUIREMENT: "Build a missile base that can be hidden under the ocean; that can keep moving so swiftly, so quietly, that it cannot be found. Although it will never be used unless the United States is first attacked, build it so that it and its crew can be kept so fit, so efficient, that it can respond instantly should the order come."

ANSWER: The SSBN—Submarine Ballistic Nuclear—more commonly known as the Polaris submarine.

The nuclear-powered submarine has revolutionized naval strategy. Freed from dependence upon the atmosphere or refueling, such a ship can remain submerged for months on end. The addition of a ballistic missile that can be fired from beneath the sea creates an invulnerable deterrent against attack.

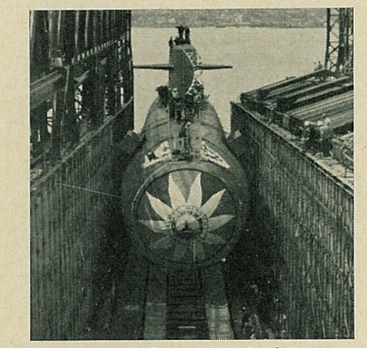
General Dynamics delivered the United States Navy's first submarine, the Holland, in 1900. Since then we've built 250 undersea vessels for the Navy, including the first nuclear-powered submersible, the Nautilus.

But the Navy's Polaris submarine, the most complex ship yet devised, has also created a revolution in shipbuilding. Questions of seaworthiness and habitability that must be factored into any ship are multiplied a thousandfold.

Jigsaw puzzle:

The first essential in building a missile submarine is the integration of literally millions of parts, all of which must be designed to work together as a unity within the 425-foot length of the fish-shaped ship. Here are a few:

A nuclear reactor, turbines, gyroscopes, marine propulsion equipment, sixteen nuclear-tipped Polaris missiles, fire-control and navigation systems, water distillers, air purifying equipment,



A new Polaris submarine being launched by General Dynamics.

computers and defensive weaponry.

Navigation and weapons control alone involve six different sonar systems, fourteen different radio systems, two or three Ship Inertial Navigation Systems, a LORAN (Long Range Aid to Navigation) system, a TRANSIT system (for contact with satellites), star tracking facilities and almost forty computers. All these, scattered throughout the ship, must be tied together into one central control for instant reaction. The ship must even carry its own spares, more than 30,000 different listings, each representing several sizes.

But creating a complete Polaris submarine system involves far more than a fitting job.

How do you join metals to withstand terrific pressures? How often does a man turn in his sleep? How do you keep a missile platform rock-steady in a rough sea? How do you muffle the noise of moving parts? How do you keep air fresh in a sealed environment?

Steady and quiet:

SSBNs are built of HY-80 steel, an alloy that can withstand stresses of up to 80,000 pounds per square inch.

But when the first ship was being built of HY-80, the metal behaved differently on outdoor building ways than it had in prior laboratory tests. The answer turned out to be one of the simpler ones. Indoor metallurgical laboratories had been warm. Outdoors, the weather got cold. Now strip heaters warm steel hull sections to a constant 200 degrees, regardless of weather, throughout the joining process.

To launch a Polaris missile successfully, the ship must be as stable a platform as solid earth, maintaining precise depth no matter how rough the sea. Making this possible was one of the toughest single design problems.

A submarine is controlled through a combination of rudders, planes (somewhat like the wings of an aircraft), and ballasting. To rise or descend, the ship must take on or force out ballast, in the form of tons of water. Ballast in various areas of a ship is continually being changed to maintain trim. An elaborate sensing and control system was developed to coordinate all parts of the complex in a perfect and delicate ballet.

In the depths, a nuclear submarine can be located mainly by sound. Anything that moves is soundproofed or cushioned. Shaft vibration of electric motors is reduced to less than ten-millionths of an inch. Hull openings, through which thousands of gallons of water must flow within seconds, are designed to minimize turbulence noise.

The millions of parts are supplied by some 11,000 industrial companies and Government agencies.

To insure total reliability, General Dynamics makes more than 50,000 tests –radiographic, ultrasonic, chemical and hydrostatic—on the ship's systems, not counting those on electronics and weaponry. Even nuts and bolts must be standardized and inspected.

Making it livable:

Extended submerged patrol also created new questions of habitability. More than 75 percent of the total space inside a missile submarine is taken up by equipment or stores. In the remaining area some 140 men must live and work, comfortably and efficiently, for 60 days.

The submarine's galleys, not much bigger than the average suburban kitchen, are organized to store, prepare and serve more than 800 full-course meals or snacks every day. Compact equipment distills 10,000 gallons of potable water daily. Laundries, pianos, ice-cream machines, are adapted to fit the available space.

Even sleep became a design problem. A seven-inch differential in the original space between multi-tiered bunks lets a crewman toss and turn normally to rest tired muscles.

On patrol the undersea sailor is rarely more than 150 feet from an operating nuclear reactor, yet shielding is

Crewmen on a Polaris submarine conduct a missile launch drill.

made so effective that the submariner absorbs less total radiation than he would under normal surface conditions.

Breathing easy:

With nuclear propulsion, engines no longer need air, but men do.

The average young adult male breathes in about two pounds of oxygen each day; breathes out about two and one quarter pounds of carbon dioxide. In a sealed atmosphere the air could quickly become poisonous. The first nuclear submarines still surfaced periodically to refresh the air. When sustained submersion became the rule, air regeneration became necessary.

Oxygen is electrolytically processed from water. Banks of scrubbers, precipitators and catalytic burners remove the carbon dioxide and the 300 or so contaminants that can build up within a nuclear submarine.

Enough air conditioning to cool a small town dissipates the heat generated by machinery and human bodies. At the end of a long patrol, the air aboard a missile submarine is far cleaner than that of the average American city.

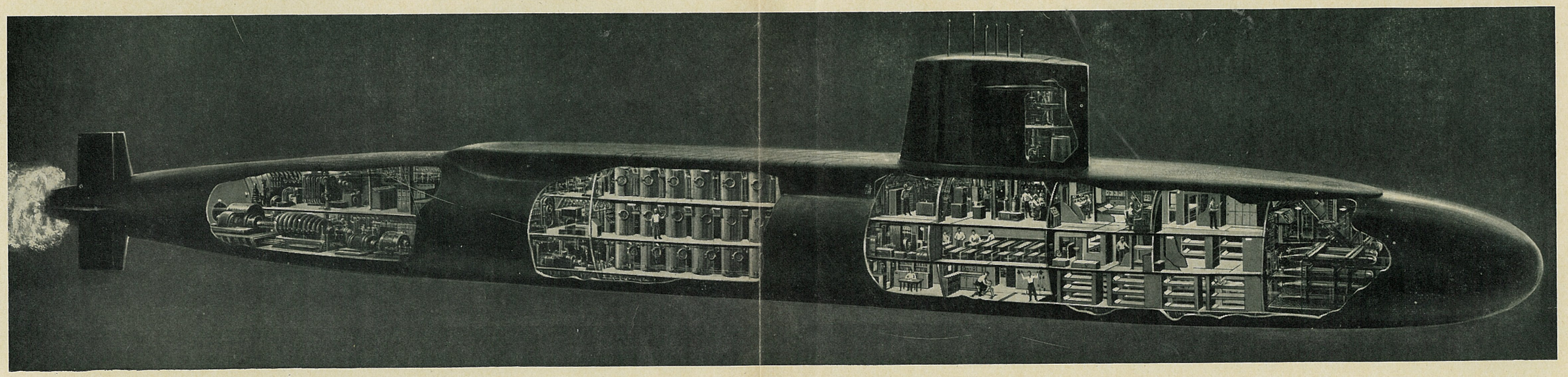
General Dynamics delivered the George Washington, the first Polaris submarine, in 1959. This month we launch the Will Rogers, the forty-first of these extraordinary ships that help the United States Navy guard the peace of the world.

Between the George Washington and the Will Rogers, a number of evolutions have taken place. New generations of submarine ships may be as much an advance over current models as the Polaris submarine is over the old Holland.

General Dynamics is a company of scientists, engineers and skilled workers whose interests cover every major field of technology, and who produce: aircraft; marine, space and missile systems; tactical support equipment; nuclear, electronic, and communication systems; machinery; building supplies; coal, gases.

GENERAL DYNAMICS

One Rockefeller Plaza, New York, New York 10020



Mgt. Club to Award Grants Of $350 to Four Scholars

Convair Management Club will award four scholarships this year to sons or daughters of Convair employes to assist them in their freshman year in college. Grants will be at least $350 each.

Deadline for application for the scholarships is March 31. Winners will be selected by May 25 and announced in June.

To be eligible, applicants must be seniors in a secondary school or high school graduates of not more than one semester before date of application, and must be in the upper third of their class scholastically. Their parents or legal guardians must be employed by Convair, either on-site in San Diego or off-site, at the time of application.

Official Management Club scholarship application forms and high school transcripts must be received by the Management Club before the last day of March. These forms are available now from the Management Club office, Kearny Mesa, ext. 3146, and from educational services offices at both Kearny Mesa and Lindbergh Field plants. They are also in the hands of all high schools in the San Diego area.

Selection of winners will be based on academic achievement, extracurricular activities, leadership qualities and personality, honors and awards.

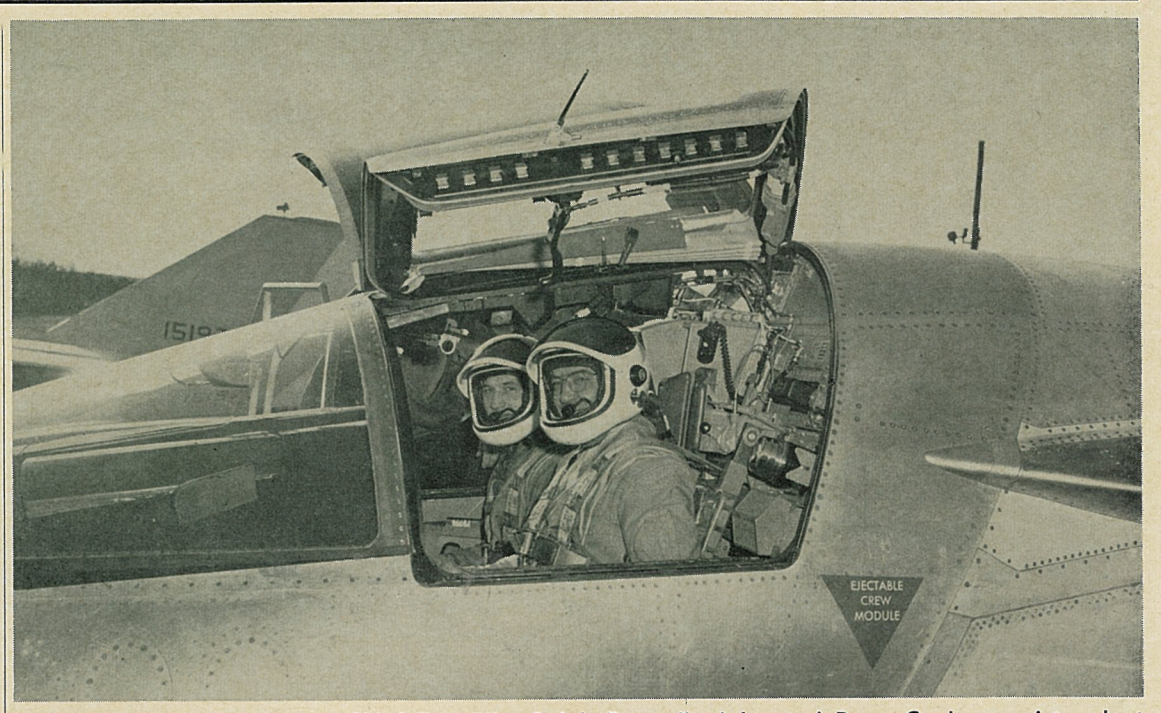
Finalists will be chosen by the selection sub-committee of the Management Club Scholarship Committee. The four winners will be selected by a panel of judges from outside the company.

Scholarships this year will be at least $350 each, for the one year, to be applied on tuition and fees at the college or university of the winners' choice. Winners will not be restricted from accepting other scholarships.

The Club Scholarship Committee is headed by M. M. Saunders. Serving on the selection subcommittee are A. J. Braidic, chairman; L. W. Turner, Gene Monce, S. E. Hartzler, C. L. Amaral, Larry Gilmore, Helen Pemberton.

Members of the special projects sub-committee are R. W. McGuire, chairman; W. M. Alberty, W. J. Dawsey, J. L. Busby, W. L. Timm, R. L. Trussell, W. J. Barraq, and C. B. Robinson.

W. S. Nader is the club's scholarship chairman.



NAVY NO. 5—Grumman Chief Test Pilot Ralph Donnell, right, and Dave Cook are pictured at controls of the fifth F-111B to roll off assembly line at Calverton, N.Y.

Fast 'Turn Around' Rate of F-111 Advantage During Test Program

F-111s in the flight-test fleet logged over 2,164 hours of flight on 1,289 missions through Jan. 2.

Supersonic speeds were reached on 465 of these flights, including 123 flights on which F-111s flew at Mach 2 and above.

"This record is quite impressive," said Bob Moller, manager of flight test, "especially when compared with records of many other airplanes after only slightly over two years of flight-testing.

"The B-58, for example, had flown only a total of 809 hours on 419 flights after two years.

"In addition, the B-58 was a bomber and generally flew much longer missions than the F-111. The rate at which we've been able to turn around F-111s—put them back in the air after completing a flight—has been one of the airplane's many fine features."

Meanwhile, another major milestone was reached in the F-111 program last month when the final aircraft in the RDT and E program — F-111A No. 13 — was accepted by the Air Force.

And testing continued mainly at four sites: Fort Worth division, Eglin AFB, Edwards AFB, and Grumman.

F-111As No. 2, 4, 5, 6, 12, 13, 14, 16, 17, and 18 are conducting various tests at Fort Worth. However, several of these airplanes are slated for duty elsewhere in the near future.

F-111A No. 2 will soon be flown to Grumman's Peconic facility in New York, where Pratt and Whitney will conduct engine tests. No. 5 will be ferried to Eglin upon completion of Gatling gun ground tests.

NASA-Edwards will be recipient of F-111A No. 6 in mid-January. The agency will use the plane for research and development and loads test.

F-111A No. 12 will enter Category I tests at Edwards following ground-vibration test, and F-111A No. 13 is destined for the same role after about six weeks of flight-testing at Fort Worth.

Slated for Category II testing at Edwards AFB soon is F-111A No. 17. F-111As No. 3 and 4 are ticketed for Tactical Air Command crew training in the near future at the California base.

Category II testing by the Air Force continued on F-111As No. 8 and 9 at Edwards. F-111A No. 1, upon completion of flutter test will be returned to Fort Worth and used as a chase plane.

Weapons-separation tests are being continued on F-111A No. 7 at Eglin.

Five Navy F-111Bs are in the test program, including SWIP (Super Weight Improvement Program) airplanes Nos. 4 and 5.

Navy F-111B No. 3 is now at Hughes Aircraft Co., Culver City, Calif., and Navy No. 2 will soon be delivered to Hughes for tests of the Phoenix missile system. Navy Nos. 1, 4, and 5 will remain at the Peconic facility at Grumman.

Kits for F-102s Ordered by AF

Convair division received a letter contract early last month for 748 modification kits for installation of navigation and formation lighting systems in Air Force F-102As and TF-102s.

The initial contract from San Antonio Air Materiel Area, Kelly AFB, Texas, is in the amount of $118,000. Total dollar amount will approximate $300,000 when contract terms are definitized in May of this year.

Test articles will be delivered to the Air Force for proofing in April. Delivery dates on production articles will be from June through August, 1967.

Engineering design and drawings for the kits were developed at Convair under an AF engineering support contract.

Convair service parts department is administering the contract.

Ballroom Dancing Classes to Start

New ballroom dancing classes start Monday, Jan. 16, under CRA sponsorship, in CRA Clubhouse auditorium, Commissioner Royce Riggan announced.

Enrollment for both beginning and intermediate classes can be made at the first two class sessions. Beginners meet at 7 p.m.; intermediates at 8:45.

Both classes will extend over a 12-week period under instruction of Bob McGlade. Cost is $18 a couple for either course.

Twenty-two General Dynamics people completed the last dance classes.

Riggan may be reached on ext. 1018 LF for further information.

Lens Club to Vote On New Officers

CRA Camera Club will elect officers for the coming club term this Sunday, Jan. 15, 7:30 p.m., in the Photo Arts Bldg., Balboa Park.

Jim Mildice won slide-of-the-year honors with his entry, titled "Pass."

Fourth quarterly contest winners were Bob Pettyjohn, beginners class, color slide, "Magic Rocks"; Mildice, "Motion"; and Clark Windsor, "Third Alarm," in advanced group.

ID Card Will Gain Ticket Discount

General Dynamics employes can obtain a 50-cent discount on ticket purchases for "Up With People" performances at 8 p.m. today through Friday (Jan. 11 through 13) at Civic Theatre by showing company identification at the box office. Regular ticket prices are $2, $3, and $4.50.

KEY RINGS, CLIPS PLACED ON SALE

Convair monogrammed key rings are on sale at 75 cents and money clips at 50 cents at all division employe services outlets. A limited supply of plastic laminated "space" playing cards also are available.

In-Plant Blueprint Classes Scheduled

Registration is still open for in-plant blueprint reading classes which held opening sessions just before the holidays at Convair's Lindbergh Field plant.

Three courses are offered in cooperation with the San Diego City College on a non-credit basis. All will run for 18 weeks.

Basic blueprint reading for first-shift employes is held Tuesdays, 3:45-6:45 p.m., Frank Dohm, instructor.

A course for second-shift employes is conducted Wednesdays, 1-4 p.m., under direction of Merle Long.

Advanced blueprint reading is taught Thursdays, 3:45-6:45 p.m., by Ed Gurling.

All classes are held in Bldg. 14, Classroom 7. Registration fee is $1.50, plus the cost of a textbook.

Wayne Turner of educational services at Lindbergh Field will accept applications for enrollment until Jan. 17. He may be contacted on ext. 491 LF.

Money and Gifts Sent to Indians

Coins totaling $45.53 were removed from the Bldg. 2 reflection pool at Convair's Kearny Mesa plant last month by Delta Divers members Bob Anderson, Jack Fisher, Dick Aurelio and Frank Whitton.

The money, augmented by a $10.50 donation from Dept. 130-1 and a collection of food, toys, and money from quality control departments, went to Pala Mission Indian families for Christmas.

Cadet Squadron 99 Presented With $100

Convair Management Club has presented a $100 check to Civil Air Patrol Cadet Squadron 99 for support of the squadron's cadet activities.

Fred Baebler, club junior activities chairman, made the presentation.

General Dynamics employes' children between the ages of 13 and 18 with an interest in aerospace sciences have been invited to join the squadron. Meetings are held at 7 p.m. Tuesdays in the Kearny Mesa Christian Church, 7045 Forum St.

Electronics Seeks Engineers in Europe

International recruiting for professional engineers is paying off for Electronics division, Lewis A. Corwin, manager of professional placement, reports.

Engineering posts in the division have been filled during the year by men from Canada, Great Britain, Holland and Denmark.

Two teams of recruiters are scheduled to leave Rochester this month, one going to Great Birtain and Denmark and the other to Argentina. The trips will bring division foreign recruiting travel to well over 100,000 miles for the past year.

Social Security Tax Will Increase

General Dynamics employes are reminded that a .2 per cent increase in federal Social Security taxes (FICA) will be reflected in paychecks distributed in 1967.

Social security withholdings for 1967 will be increased from 4.2 to 4.4 per cent of the first $6,600 of earnings. This means maximum deduction for 1967 will be $290.40, compared with $277.20 this year. Of the .2 per cent increase, .15 is for Medicare allocation.

Club at Vandenberg Earns National Honor

Convair - Vandenberg Management Club has received three awards from the National Management Association. The club received a "Management Improvement Award" plaque, a third place "Outstanding Club Award" certificate and the "Excellent Club Award" for the second consecutive year.

Bowers to Address Quality Gathering

Jack L. Bowers, Convair division general manager, will be guest speaker at the Jan. 24 meeting of the Los Angeles Section of the American Society for Quality Control. He will speak on "Top Management Looks at Quality."

L. I. Medlock, Convair reliability control director, also will attend.

E. L. Johnson to Head Dynamics 457 Club

E. L. Johnson, assistant supervisor in tool engineering Dept. 420-1 at Convair, has been elected president of Dynamics 457 Toastmasters Club.

Other new officers are F. W. Stevens, Dept. 984-4; Joseph Rathfon, Dept. 584-2; R. G. Bowen, Dept. 410-0, and M. J. Shotey, Dept. 551-3.

The club meets from 5:15 to 7:15 p.m. Thursdays in CRA Clubhouse.

Eggleston to Teach Extension Course

Dr. D. M. Eggleston, a senior dynamics engineer in Convair's Dept. 985-0, is presenting a winter quarter graduate lecture course in "Optimal Control" at University of California Extension.

The course is limited to students with a good background in control theory. For information, phone Eggleston at KM ext. 2185.

DOW WILL JUDGE AWARD PROGRAM

H. Cushman Dow, Convair division general counsel, will serve as a judge for the 1967 Bank of America annual Achievement Awards program for California high school seniors.

Doyle Joins Faculty Of Army Mgt. Center

C. W. Doyle, FW cost reduction and value control administrator, has been named an honorary faculty member of the Army Logistics Management Center at Fort Lee, Virginia.

The Center was formed in 1954 to train top-level logistical managers and has since been expanded to provide functional courses for middle management personnel.

"We were particularly pleased to have Doyle join the ranks of our other distinguished guest speakers in recognition of his assistance to the Center's efforts during the past nine months," said Col. J. P. Alexander Jr., commandant.

Professor to Speak For AIAA Chapter

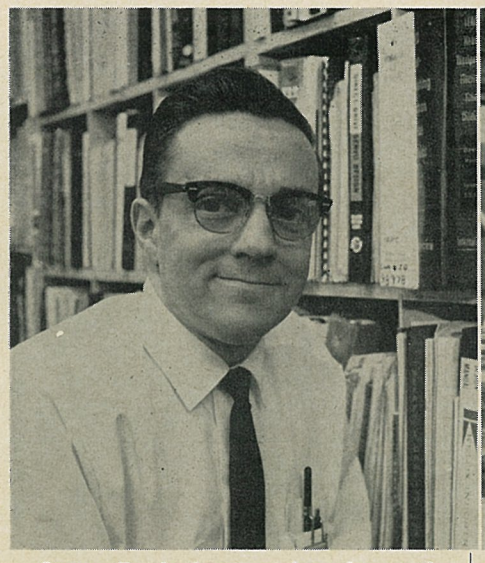
Dr. Raymond L. Bisplinghoff, national president of the American Institute of Aeronautics and and Astronautics, will speak to members of the North Texas Chapter AIAA Jan. 20 in Dallas.

His topic will be "Aerospace Technology and Society," concerning mainly the "justification of national aerospace effort and its relation to the solution of other pressing national problems."

Dr. Bisplinghoff is head of the Department of Aeronautics and Astronautics at MIT. He previously served as an associate administrator for advanced research and technology at NASA.

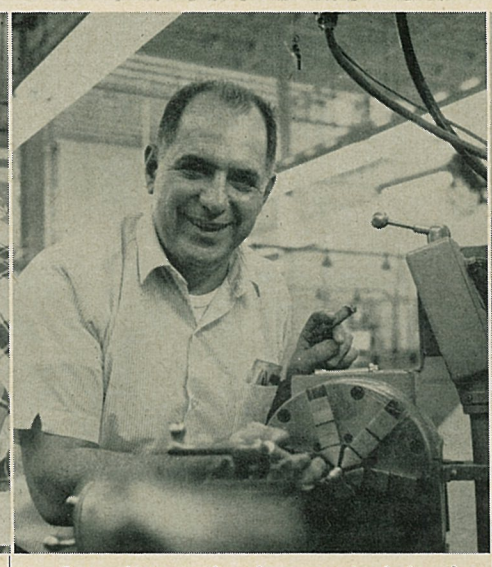
SCIENTISTS ATTEND TECHNICAL SEMINAR

Twenty Convair division engineers and scientists last month attended a three-day "technical presentations seminar" conducted by William R. Sears, senior partner in a San Francisco market management consultant firm.

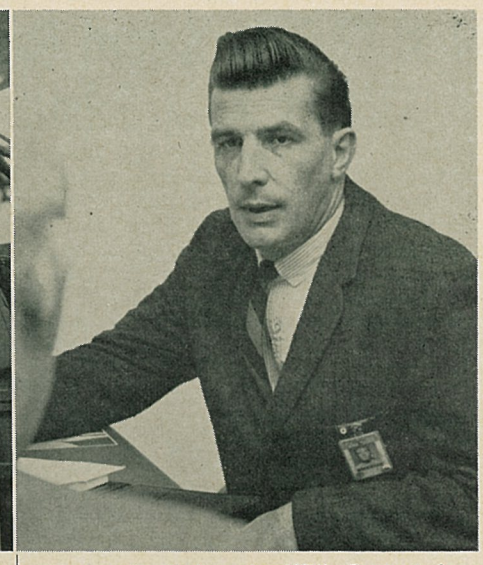


Steve E. Junkerman has been the keeper of all vendor data and military specification files for Electronics operations at San Diego since it was consolidated in a central location about three years ago. He's constantly on the move searching out government data or vendor information for Electronics people and in his spare time updates the voluminous amount of material. Plans are in the making to transfer all vendors' catalogue pages to microfilm. What now occupies six 25-ft. long shelves could be stored in five square feet. Junkerman moved to San Diego from his home state of Ohio in 1959. He was an insurance safety specialist before joining General Dynamics at Convair division. He transferred to Electronics-SD in early 1962 and was a quality control engineer before this job.

Jesse R. Estrada, a Convair test lab mechanic in Dept. 978-3 at Point Loma Test Site, is shown installing an air bearing pressure gauge to be used in tests in which a re-entry vehicle mass model separates from its interstage adapter. He has been at Point Loma four years and some of his duties include work with explosive charge and hydrogen peroxide engine systems for launch vehicles. A native of Texas, Estrada joined the Company in 1947 and has been employed continuously since 1950 except for two years Army service that included 10 months duty as a combat wireman in Korea. He has many fond memories of 10 years past service in "experimental" including work on the Sea Dart, Pogo and F-102. He earlier had worked on the Convair 240 and B-36 programs.



Pete Lata, who has worked in the Stromberg-Carlson Data Products' model shop, was recently promoted to leadman of the expanding operation. He is responsible for both sheet metal and machine shop work. The model shop builds the prototypes of all first units of Data Products from start to finish, doing all the fabrication, making the aluminum and steel frames, and doing the welding and painting. The crew presently numbers 10 men, with three more to be added soon as a night shift. Lata is a 20-year Navy man, retiring in 1957 with rating of chief metalsmith. He was an inspector at Ryan Aeronautical Co. about a year before joining S-C. He and his family have made San Diego their home since 1950. Lata and his wife Rita, have two teen-age sons, Bill and Pete, and a married daughter, Ri Ellyn.



Ray C. ("the sheriff") Forrest is a familiar figure to personnel visiting Convair operations at Vandenberg AFB. Forrest joined Convair in 1956 after completing 11 years on the Portland, Ore., police department and was assigned to Vandenberg in July, 1958, as security officer. He became an industrial relations analyst in 1958 and since that time has had duties in all areas of industrial relations. At present, he is responsible for wage and salary, labor relations and security at the Western Test Range facility. Forrest, his wife, Virginia, a son, Mike (who works in Dept. 985-3 at Vandenberg), and two daughters, Pam and Julie, reside in Arroyo Grande, Calif., a small coastal community north of Vandenberg. They all enjoy spending their leisure hours hunting, fishing and searching for clams.

Machines Capacity Doubled To Keep up With C-141, C-5

Convair division has doubled capacity of two numerically-controlled skin milling machines to keep pace with production of C-141 aluminum parts now in work and C-5 components to come as production starts on empennages for the new Air Force cargo jet transport.

Two additional vertical spindle heads have been installed on each of the two Giddings and Lewis skin mills at AF Plant 19 in San Diego with Air Force approval and funding.

The tape-driven mills are now equipped with four identical spindle heads which can cut four righthand, or four lefthand, or two right and two left components simultaneously.

The modification was conceived, designed and installed jointly by Convair plant engineering and tooling.

Plant engineering modified all electrical, hydraulic, pneumatic installations required for conversion of the machines to four spindles. Tooling department fabricated the mounting plates for the spindle installation. Spindles were manufactured for Convair by Whitnon Mfg. Co., Farmington, Conn.

Aluminum parts for C-141 empennages now being cut on the milling machines are vertical stabilizer ribs.

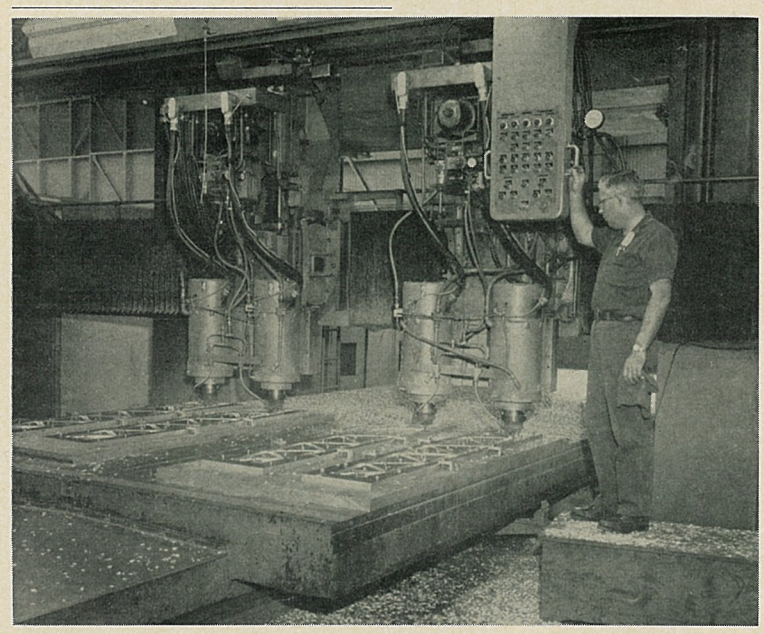
Programming is now under way for C-5 components such as the tapered beam bed, outboard and front beam webs, horizontal stabilizer hinge and actuator rib assemblies, hinge back-up fittings, elevator hinge and actuator ribs, vertical stabilizer forward beam tapered web and web-rear beam, machined rib caps, upper and lower rudder for the actuator rib.

Aircraft Fatigue Study Approved

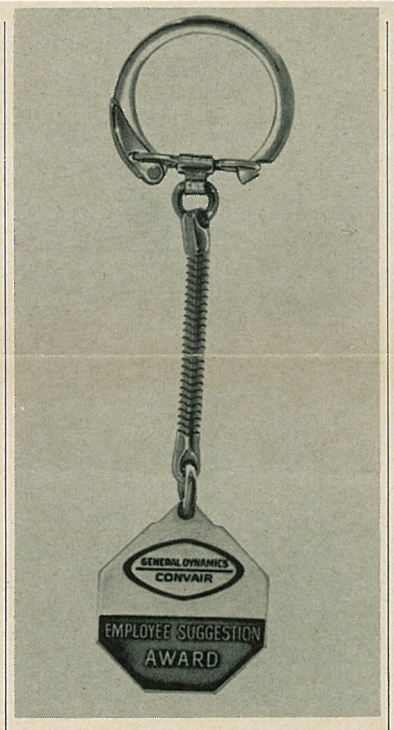
Convair division has received a study contract from the Air Force for investigation of the life of forged aluminum used in aircraft wheels.

Hill AFB, Ogden, Utah, is contracting agency for the Air Force for the study which will extend throughout the current year. Dollar amount of the contract is $38,958.

Clarence Smith, Convair fatigue specialist, will conduct the study for the effect of cycle ratio on the Smith method of predicting failure in aircraft wheels. He said that a large portion of the contract will be devoted to fatigue testing. He also will teach a 40-hour course in predicting fatigue life at Hill AFB, according to the contract terms.



SEEING DOUBLE—Robert Patrick, numerical control profiling mill operator at Convair, starts up multiple spindleheads on Giddings and Lewis mechanically-controlled skin mill at AF Plant 19. Capacity of mill has been doubled with addition of two more vertical spindle heads.



350 Key Chains To Reward ESs

Convair medallion key chains will be given to the first 350 non-supervisory employes who submit eligible Employe Suggestions beginning Monday, Jan. 16.

Suggestions must meet eligibility requirements specified on ES forms but do not necessarily have to be approved for the suggester to receive one of the chains.

"This will be the last chance for employes to get one of these unique key chains," Warren Ridge of the cost reduction and value control department said.

Employes submitting suggestions that are approved and implemented also will receive 10 per cent of net savings for one year to a maximum of $5,000.

Engineers Take Part In Metals Congress

Three engineers from Convair's Dept. 572-1 participated in the 1966 American Society for Metals National Metal Exposition and Congress in November in Chicago.

Jack L. Christian served as a session chairman and symposium coordinator and technical papers were presented by Dr. N. R. Adsit and Charles J. Kropp.

GIRLS WILL PLAY BONITA COURSE

Members of GD Women's Golf Club will hold their first 1967 tourney Saturday, Jan. 14, over the Bonita course. Tee-off time will be 10:15 a.m.

'Convairiders' Plan Impressive Series of Jaunts by Bicycle

CRA Bicycle Club "Convairiders" Saturday (Jan. 14) will take a 25-mile cycle tour of the Mission Bay area, leaving at 9 a.m. from De Anza Cove parking area.

The club inaugurated an awards program in which club cycling jerseys will be awarded to members completing 200 miles on club-sponsored rides.

First rides in the mileage accumulation contest were a 25-mile circuit Dec. 17 from North Clairemont to Torrey Pines State Park and a 100-mile tour Jan. 1 from the UCSD campus to Mt. Palomar and return.

The jerseys have a special color pattern designed to be readily seen by motorists as well as to provide club identification.

Membership is open to all GD employes and family members. Further information can be obtained from Joe Olander, KM ext. 3045, Cy Campbell, KM ext. 1854, or Myke Dickey, KM ext. 3207.

Following is a listing of other rides planned during the next six months by date, destination and mileage:

Jan. 28, Tijuana, 50; Feb. 11, Silver Strand, 25; Feb. 25, Oceanside, 50; March 11, El Monte, 25; March 25, Otay Mesa, 50; April 8, Frontier Town, 25; April 22, Encinitas, 50; May 13, Rancho Santa Fe, 25; May 27, Grand prix, 50; June 10, Point Loma, 25, and June 24, Escondido, 50.

Ten-speed bikes are needed for 50 mile tours and are recommended for shorter rides.

DeShazo Will Head Toastmaster Club

James A. DeShazo, a senior reliability engineer in Dept. 146-1, has been installed as new president of Convair Toastmasters Club 3745.

Other new officers are H. L. Jensen Jr., Dept. 963-4; J. E. Cook, Dept. 957-0; E. D. Melton, Dept. 959-0; J. E. McCafferty, Dept. 146-1; W. F. Butler, CRA, and George Miyashiro, Dept. 146-1.

H. O. Story of Dept. 142-0, area governor and club past president, was installing officer.

The club meets from 4:15 to 6 p.m. Wednesdays (except on Management Club meeting nights) in CRA Clubhouse.

Material Depts. Aid Needy at Christmas

Convair material departments under H. E. Moose, director of material, raised $800 to bring Christmas to five families with a total of 20 children, who otherwise would have had a dreary holiday.

Procurement, material control and service parts departments at Kearny Mesa plant adopted three families; Kearny Mesa material engineering coordination and material services joined in collections for one family; and Lindbergh Field procurement department provided for still another family.

Ex-Vice Commander Of BSD Joins Convair As Ames Assistant

Col. Ray E. Soper, USAF, (ret) former vice commander of the Air Force Ballistic Systems Division, has joined Convair as assistant to C. S. Ames, vice president - military space programs.

Col. Soper

He served as vice commander of BSD from August 12, 1964, until his retirement Nov. 30 and previously had served 15 months as BSD chief of staff.

In his new role, Soper will assist Ames on all technical and administrative matters relative to military space programs, including division activities on the advanced ICBM program.

Ames, in announcing the appointment, said Col. Soper brings with him a strong background in the ballistic missiles field.

As chief of the Ballistic Division under the assistant chief of staff for guided missiles at Air Force Headquarters, he was one of the original members of the Ballistic Missile Planning Group in 1954.

He was instrumental in establishing long range plans and programs for the Atlas, Titan and Minuteman ICBMs, and Thor and Jupiter IRBMs as secretary of the Air Force Ballistic Missile Committee.

A native of Oklahoma City, Col. Soper holds a degree in mechanical engineering from Oklahoma State University.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Jan. 18. Call ext. 1071 LF, or ext. 3322 KM.)

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ARCHERY — Reorganization meeting and film showing Jan. 19, 7:30 p.m., CRA Clubhouse. Call Al Stone, ext. 586 LF, for information.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING—New beginning and intermediate classes start Jan. 16, CRA Clubhouse. Call Royce Riggan, ext. 1018 LF, for information.

BASKETBALL — Slow-break and fast-break CRA league play Wednesday and Thursday evenings, Saturdays at noon, Muni Gym, Balboa Park.

BICYCLE CLUB—25-mile ride around Mission Bay Jan. 14. Depart from De Anza Cove parking area at 9 a.m.

BONAIR FLYERS—Fly-in to Death Valley weekend of Jan. 28-29. Sign with Red Taylor, ext. 2056 KM.

BRIDGE — Play each Friday, 7:30 p.m., CRA Clubhouse.

CAMERA CLUB — Election of officers Jan. 15, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS — Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS — Meeting Jan. 18, 7:30 p.m., Convair cafeteria, Lindbergh Field.

DELTA DIVERS — Meeting Jan. 11 (tonight), 7:30 p.m., CRA Clubhouse, Room C. Slide showing of trip to La Paz.

FENCING — Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Meeting Jan. 17, CRA Clubhouse. Potluck at 6:30 p.m., meeting, 7:30 p.m.

GOLF — Entries open tomorrow (Jan. 12) until Jan. 20 for CRA plant championship scheduled during February at Chula Vista. Call ext. 1111, KM.

GUN CLUB—Annual Big Game Drawing Jan. 18, Gillespie Field Clubhouse, 7:30 p.m. Entries accepted to date of drawing at Convair, Stromberg-Carlson, Electronics employe services outlets.

ICE SKATING — GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

JUNIOR SCIENCE — Meeting Jan. 20, 7:30, CRA Clubhouse.

MOVIES — Reduced prices at State Theater, Euclid & El Cajon Blvd. Admission: adults, $1; children, 35c.

PISTOL CLUB — Club shoot Jan. 22, 9:15 a.m., SD Police Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting Jan. 19, 7:30 p.m., CRA Clubhouse.

RIDING CLUB—Meeting Jan. 12, 7:30 p.m., CRA Clubhouse.

RIFLE CLUB — Senior shoot tonight (Jan. 11), 7:30 p.m., Gillespie Field Range.

ROCKHOUNDS — Meeting tonight (Jan. 11), 7:30 p.m., CRA Clubhouse.

SCULPTURE — Workshop sessions, Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SPORTS CAR CLUB—Meeting tonight (Jan. 11), 7:30 p.m., Convair executive dining room, Lindbergh Field.

TENNIS — Entries open now for winter tourney, starting Jan. 28. Call ext. 1111.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamic Toastmasters No. 457, 5:15 each Thursday, both CRA Clubhouse.

TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

TRAILERS — Road Runners meet Jan. 19, Gillespie Field Clubhouse.

TRAILERS — CRA Travelers outing Jan. 20, 21, 22, to El Rancho Trailer Villa, Borrego Springs. Call Virg Marshall, ext. 3541, KM, for information.

WOMEN'S GOLF — Tourney Jan. 14, Bonita course, 10:15 a.m.

Yachtsman Course Will Begin Jan. 24

A new 12-session course in "Piloting and Small Boat Handling," sponsored by the Helix Power Squadron, will be held at 5 p.m. Tuesdays beginning Jan. 24 in CRA Clubhouse.

General Dynamics employes, families and friends are invited. Boat ownership is not a prerequisite. Further information can be obtained from the class chairman, Lee Schenke, KM ext. 2889 or 469-9043.

Eleven successfully completed a similar course last month. They were L. E. Batchman, Dept. 963-3; A. E. Buggele, NASA; R. A. Cox, Dept. 962-3; D. L. Darmstadt, NASA; Mrs. Nova L. Fraser, Dept. 595-0; E. D. Heller, Dept. 192-0; F. J. Johnson, Dept. 586-1; G. H. Lehrer, Dept. 966-4; J. T. McFarland Jr., Dept. 587-2; A. E. Petitjean, Dept. 574-3, and J. K. McKinnon.

Drawings to Decide Winners of Tickets

One hundred tickets for San Diego Gulls home hockey games will be awarded in CRA drawings Jan. 13 and 20.

Thirty tickets (in multiples of two) will be given out Jan. 13 for games Jan. 14 and 15 with Oakland and Jan. 19 with Portland. Seventy tickets will be awarded in the Jan. 20 drawing for seven games scheduled through Feb. 7.

Employes may enter by depositing a slip of paper with name, division, plant, department number, shift, and plant phone extension in deposit boxes.

Boxes are at Convair, Stromberg-Carlson, and Electronics-SD employe services outlets, the Bldg. 51 engineering mailroom at Lindbergh Field, H. C. Medearis' office at Air Force Plant 19, and CRA Clubhouse.

Ice Hockey Tickets On Sale at Bargain

Reserved seat tickets for the Jan. 29 ice hockey game between the San Diego Gulls and Vancouver are now on sale at all employe services outlets at reduced price.

Regular $2.50 seats are priced at $2 as long as the supply lasts. Deadline is Jan. 25.

Tickets are on sale at all Convair plant outlets, including H. C. Medearis' office at Plant 19; Stromberg-Carlson and Electronics-SD employe services.

Lambert Taylor Elected by Flyers

Lambert "Red" Taylor, Dept. 146-1, was elected president of the Convair Bonair Flyers for the coming club term at elections held Jan. 3.

Others taking office April 1 will be Lyle Wood, Dept. 800-0; Margaret Moody, wife of James Moody, Electronics-S.D.; Nancy Vinson, Dept. 951-6, and Harold Wendt, Dept. 589-1.

Reservations are now being taken for a fly-in to Furnace Creek in Death Valley for the weekend of Jan. 28-29. Anyone interested in making the trip may sign with Taylor, ext. 2056, Kearny Mesa.

Rockhound Members Will Meet Tonight

Thirty-five members of CRA Rockhounds spent the New Year's weekend on a field trip to Wiley Well.

The club's next field trip will be Jan. 28 and 29 to Gold Rock Ranch near Ogilby in Imperial County for jasper and agate.

Maps and details will be provided at the club's meeting at 7:30 this evening (Jan. 11) in CRA Clubhouse. Fritz Jorrey of Dept. 572-1 will give an illustrated talk.

Jan Kreis Tops Riders in '66

Jan Kreis was presented overall high-point trophy for standings in CRA Riding Club's horse shows during 1966 at the annual awards dinner.

Other trophies for top performance went to: Sherri Special, equitation, 12 yrs. and under; Davy Watson, gymkhana, 12 yrs. and under; Susan Harmer, equitation, 12 through 17 yrs.; Sheila Payne, gymkhana, 12 through 17; Judy Watson, equitation, 18 and over; David Watson Sr., gymkhana, 18 and over.

CRA's George Schmeidel, who made the presentations, handed honorary trophies to Joe Pena, who had headed the club as commissioner until late last year, and Jay Harmer, who served as show announcer.

Annette Spencley was in charge of arrangements for the buffet dinner.

Members will hold their regular monthly meeting tomorrow evening (Jan. 12), 7:30 p.m., in CRA Clubhouse.

Dates Set For Net Tourney

CRA Tennis Club will hold its winter tournament at Morley Field and Mesa College courts beginning Jan. 28.

Men's singles in novice, intermediate and advanced will be Jan. 28 and 29 with women's singles and men's doubles Feb. 4 and 5. Mixed doubles also are scheduled.

Entries will be limited to GD employes and resident customer and vendor reps and members of families.

Club members will receive entry forms by mail. Others may obtain them at CRA Clubhouse, KM ext. 1111, or by phoning Bob Herold, KM ext. 3392; Jim Jobe, KM ext. 3468; Dick Mostowy, KM ext. 2975, or Toby Purczynski, KM ext. 2135.

First 104 to Sign up Will Get Golf Berths

Entries open tomorrow (Jan. 12) for the annual CRA plant golf championship to be played over four weekends in February at Chula Vista.

The first 104 golfers signing up before Jan. 20 deadline will participate. Entrants must have played in at least three monthly CRA tournaments since February, 1966.

Reservations can be made by phoning KM ext. 1111. First-round greens fee of $3.50 must be paid by Jan. 20 at CRA Clubhouse, Kearny Mesa, or at employe services offices at Lindbergh Field or Air Force Plant 19. Fees will not be refunded if players fail to show at assigned starting times.

First round of match play will be Feb. 4.

Coineers Reminded Year's Fees Due

Coineers are reminded to bring their year's dues to the Jan. 18 meeting, 7:30 p.m., in the Convair cafeteria, Lindbergh Field.

Displays will carry out the "Tokens and Medals" theme, and Robert Gelink will talk on paper money. Door prizes will be a $5 gift certificate and two currency books. Drawing awards will be a 1901 $5 gold Liberty, 1928D $2½ gold Indian, and three coin albums.

Archers Will Hold Organization Meet

Convair archers will reorganize at a meeting called for next Thursday, Jan. 19, in CRA Clubhouse, Kearny Mesa, Room C.

Commissioner Al Stone urges all former members and friends to attend. A 30-minute movie of the Fresno Archers Tournament will be shown.

YOUTH YULE AID—Convair Wives Club members dressed dolls for girls and purchased toys for boys for distribution to underprivileged youth at Christmas time by Salvation Army. Mrs. John F. Harrison, left, was dolls chairman and Mrs. Willard V. Ohland, right, was chairman of Del Mar day at races project which provided funds for toys.

Sports & Recreation

Two Hoop Squads Still Unbeaten In Fast-Break League Contests

Underbrush and R&E hoop squads remained undefeated last month after the first three rounds of CRA fast-break basketball league play.

Underbrush topped Centaur, 58-34, in its second league game Dec. 7 and drubbed Flight Control, 57-35, on Dec. 14. R&E defeated the Hot Shots, 54-37, Dec. 7 and the Cosmo Bums, 69-24, Dec. 17. In other games, Flight Control routed Cosmo Bums, 60-35, Dec. 10 and Centaur outpointed the Hot Shots, 44-34, Dec. 14.

In CRA slow-break competition, Bean Counters defeated Lindbergh Field Jets, 28-16, Plastics outpointed Gyros, 27-24, and Bullet Biters edged Stromberg-Carlson, 16-15, Dec. 8.

Close contests Dec. 15 ended with Bullet Biters defeating Lindbergh Field Jets, 30-28, Gyros edging Stromberg-Carlson, 25-24, and Plastics outpointing Bean Counters, 32-25.

Following is a schedule for games during the next two weeks:

Fast-Break League

Jan. 11—Centaur vs. Flight Control, 6:30; R&E vs. Underbrush, 7:40; Jan. 14—Cosmos vs. Hot Shots, 12 noon.

Jan. 18—R&E vs. Flight Control, 6:30; Underbrush vs. Hot Shots, 7:40; Jan. 21—Centaur vs. Cosmo Bums, 12 noon.

Slow-Break League

Jan. 12—Stromberg-Carlson vs. L. F. Jets, 6:30; Bullet Biters vs. Plastics, 7:40; Gyros vs. Bean Counters, 8:50.

Jan. 19—L. F. Jets vs. Plastics, 6:30; Stromberg-Carlson vs. Bean Counters, 7:40; Gyros vs. Bullet Biters, 8:50.

All games are scheduled on Court 3 at municipal gymnasium, Balboa Park. Spectators are welcome without charge.

Four Teams Victors In Holiday Bridge

Eve Leasure teamed with Jim Stephenson to win North-South honors, and Mr. and Mrs. Wayne Evans won East-West at CRA Bridge Club's Christmas party at the Miramar Officers' Club. Ten tables were in play.

Winners at the club's New Year's Eve party Dec. 30 in the CRA Clubhouse were: North-South, Eve Leasure and Stella Christy; East-West, Mr. and Mrs. Abernathie.

Delta Divers Name Top Trio For Year

Delta Divers have awarded "Diver of the Year" trophies to Bill Howard, Rod Johnson and Jim McGinnis for amassing the largest number of points in club competition last year.

McGinnis' 12-member team took "Team of the Year" honors by accumulating a combined total of 254.5 points. In addition to McGinnis, top six members of the team receiving trophies were Clay Valstad, Larry Blackburn, Cliff Kickbush, Gary Jenkins, Bob Anderson and Miss Leslie McGinnis.

Delta Divers' monthly meeting will be at 7:30 p.m. tonight, Jan. 11 in Room C at CRA Clubhouse. Dick Dilworth of Convair Dept. 954-1 and his wife, Billee, will show slides from a trip to La Paz.

Four Take Honors In CRA Bridge Play

Margaret Grindstaff and Cecil McCollough won North-South and Burton Grindstaff and Howard McCollough took East-West honors in Dec. 16 CRA Bridge Club play.

Mrs. Grindstaff has received one unit from the American Contract Bridge League for winning the club's six-week Winter Series competition.

Winners in Dec. 9 club play were Jody and Tony Miller, North-South, and Oliver Satica and Norman Saslove, East-West.

Virgil Akers Wins Costume Contest

Virgil Akers won top award in the costume contest at Convair Management Club's New Year Eve dance with his Spanish Don outfit.

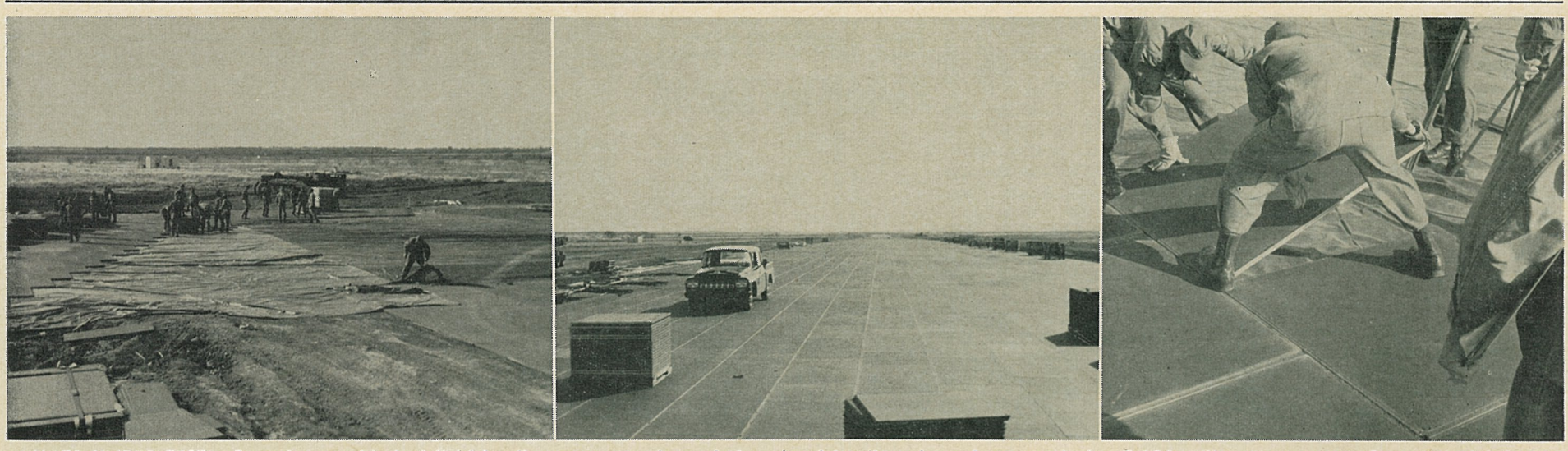
Akers' sweepstakes award was a pinata filled with 50 $1 bills. In addition, he won the $25 U.S. Savings Bond for best in the "Don" category.

Others winning bonds were Mrs. Feckler, ladies' fiesta dress; Shirley Calland, Mexican girl; Betty Jo Bruce, Indian woman; Dorothy Baber, dance hall girl; Al Baber, Yankee gambler; Farrell Boley, matador in the special category.

Over 100 of the some 500 attending the gala holiday affair were in costume, according to Manuel Moseley, in charge of arrangements. The dance was sponsored by departments reporting to W. L. Van Horn, LF plant manager.

PECAN PARK NUTS PLACED ON SALE

Two-pound bags of pecans from CRA Pecan Park are on sale at 70 cents each at CRA Clubhouse; all Convair, Stromberg-Carlson and Electronics-SD employe services outlets; the Bldg. 51 engineering mailroom at Lindbergh Field, and H. C. Medearis' office at Air Force Plant 19.



MATS UNDER TEST—Convair-assembled airfield landing mats are shown being laid by Air Force recruits as part of runway at Dyess AFB, Texas, where they are now in use for landings and take-offs of AF and Army craft. To date, hundreds of landings have been made by C-130 military transports. Convair is fabricating honeycomb core aluminum mats under subcontract for Kaiser Aluminum Chemical Corp.

'Moon Walk' Prototype Involves New Concept

A new overhead air bearing concept recently developed and tested by Convair division can be used by division scientists to simulate "walking on the moon's surface" and may have useful commercial applications.

The new concept was created by Earl Christian, a manufacturing development engineer in Dept. 491-0. A small prototype has been tested by the crew performance section of life sciences Dept. 592-0 and has been used to support a man in a space suit with total weight of 210 pounds.

The prototype air bearing is attracted to an overhead magnetic surface by permanent magnets. A thin (.002-inch) uniform layer of air is maintained by pressure between the bearing and the overhead surface and the bearing can move across the surface without friction.

Robert Brazell, a Convair life sciences senior research engineer, said the design makes the overhead air bearing extremely stable and is the first known to be unaffected by off-center loads.

Christian first experimented with combining magnet and air bearing technologies as early as 1961. The new concept may have commercial applications in overhead material handling devices and to provide vibration-free support for manufacturing and test equipment.

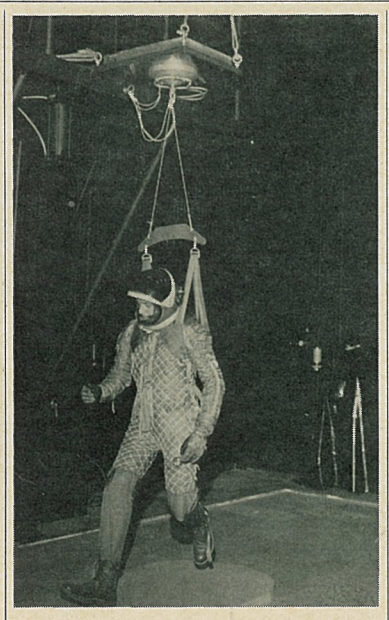
NASA Langley Research Center studies have led to concepts incorporating the air bearing principle for simulated "moon walking" which would use a number of magnets and negator springs. Lines from the springs would be attached to various points on the test subject's space suit.

The negator springs would support 5/6 of the weight of the individual so that he himself would support only 1/6 of his own weight, simulating the light pull of gravity on the lunar surface.

Poll Favors More Three-Day Weekends

U. S. businessmen widely favor changing a number of holidays so that they fall on Mondays, thus creating more three-day weekends.

A poll of National Chamber of Commerce members showed that 87 per cent favored observing such holidays as Memorial Day, Thanksgiving, Independence Day, Veteran's Day and Washington's Birthday on Mondays. The questionnaire did not discuss Christmas or New Year's.



NEW TECHNIQUE—Robert Brazell, Convair senior research engineer, is suspended by new overhead air bearing device. Magnets attract air bearing to overhead surface.

Convair-Built Mats Tested in Landings

Convair-fabricated airfield landing mats are proving themselves in actual use as part of a runway at Dyess AFB, Abilene, Texas, as the Air Force puts them, together with three other types of mats, through an intensive testing program.

The honeycomb-core aluminum mats, fabricated by Convair under a subcontract for Kaiser Aluminum Chemical Corp., form 1,262 feet of a 60-ft.-wide taxiway, and 1,000 feet at the head of the 96-ft.-wide runway. An additional 600 feet is laid midway down the runway.

Laying of the quarter of a million sq. ft. of Convair mats was completed just before Thanksgiving and first landings were made Dec. 5 when Maj. Gen. R. N. Baker, vice commander of the 12th Air Force District, brought in a C-130 cargo transport.

C-130s have so far made several hundred landings in both directions. Also, small Army observation craft have been landed on the test runway. Fighter planes are scheduled for landings during January.

"Convair mats were laid faster and accepted the crown in the runway more readily than the other types of mats under test," V. J. Park, ALM assistant program manager, reported. "We feel that our mats are performing very well so far and holding their own against competition."

W. T. Myers, principal engineer on the mat program, was Convair's representative at Dyess during the time it took the Air Force to lay the runway sections.

Convair is producing the airfield landing matting on its semi-automated line at the Lindbergh Field plant. By mid-December one-third of the current production order of 5 million square feet had been assembled, C. L. Jackson, ALM program manager, said.

According to a statement in the Metalworking News of Dec. 5, both the Army and Air Force now are "most excited" about the Convair-fabricated mat.

Covers for Philatelists Signed Off at 612 ft. During Asherah's Last West Coast Dive

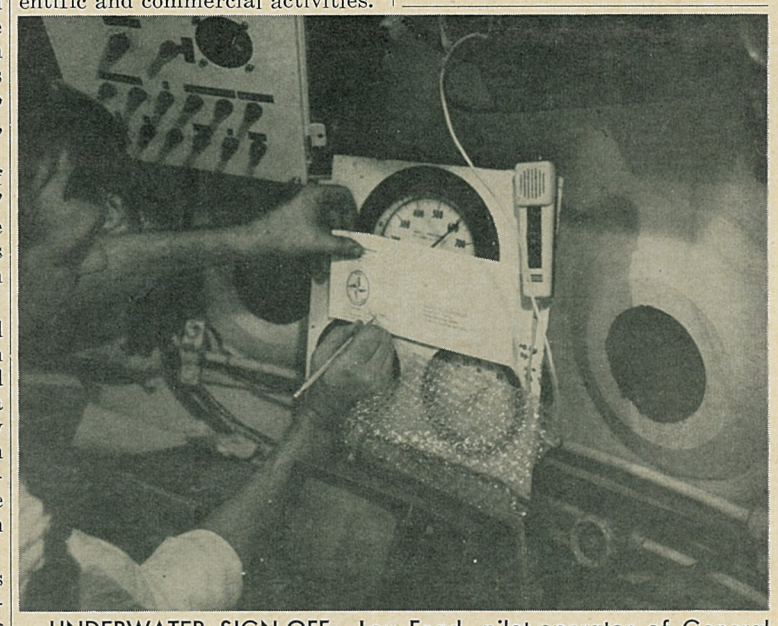
Asherah dive covers were signed off for over 100 philatelists throughout the country on the last West Coast dive of the General Dynamics-built two-man research submarine before it was returned in mid-December to Electric Boat division, Groton, Conn.

Lou Fead, operator-pilot of Asherah, took the "deep dive" covers with him on a 612-ft. dive in Pacific Ocean waters, six miles west of Point Loma, Calif. on Dec. 12.

Asherah will be overhauled and modernized in preparation for an archaeological expedition planned by the University of Pennsylvania Museum off the coast of Turkey in the Aegean Sea. The research submarine was designed and constructed by Electric Boat for the University of Pennsylvania in 1964.

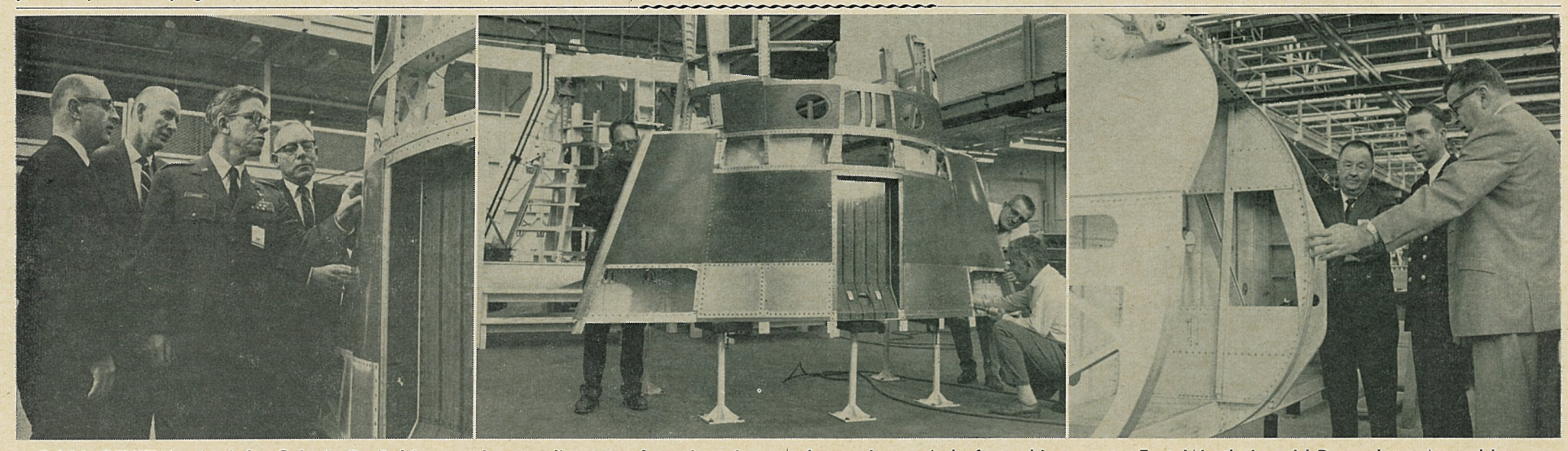
During the last year it has been assigned to General Dynamics' Marine Technology Center in San Diego for a variety of scientific and commercial activities.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!

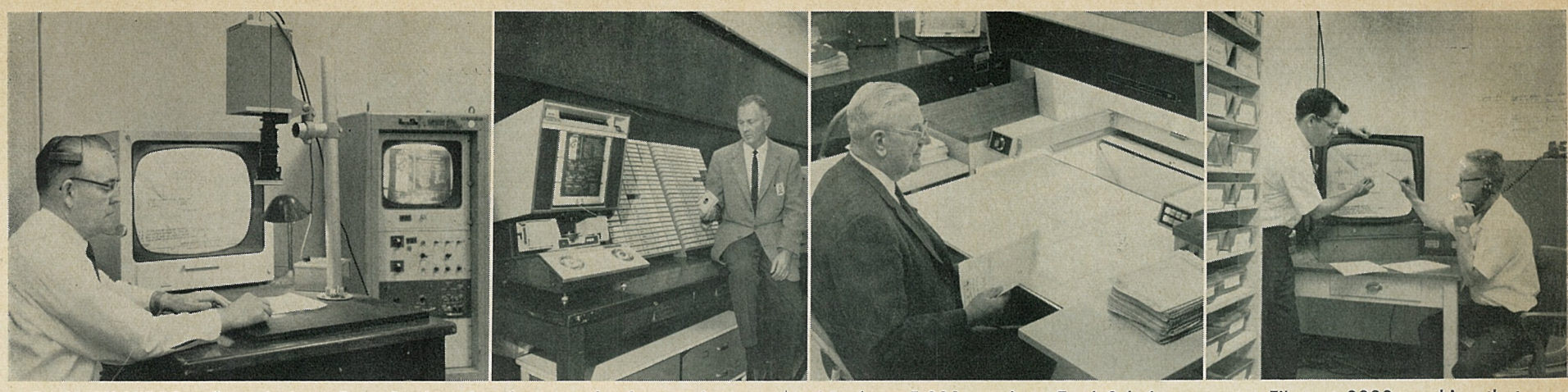


UNDERWATER SIGN-OFF—Lou Fead, pilot-operator of General Dynamics-built two-man research submarine Asherah, signs "dive" cover at 600-ft. depth on last dive of submarine in San Diego waters before return to Electric Boat division.

ITALIAN VISITORS—Italian Army officers visited Pomona division last month for briefings on Redeye weapon system. From left, front row: Maj. M. L. Graffeo, U. S. Army liaison officer; Brig. Gen. Mario Petitti, Brig. Gen. Giovanni Bonzani, Maj. Gen. Enrico Rizzo, Brig. Gen. Alfredo Grossi, LTC Ludovico Luppis and Dov Abramis, Pomona division assistant director of Redeye program management. Back row: L. E. Spear, Pomona vice president-plans and programs, and Lt. Col. R. Duemler, MAAG, Rome.



F-111 REVIEW—At left, Col. J. B. Robinson, deputy director of engineering, F-111 System Program Office, Wright-Patterson AFB, looks over first F-111 stabilization boom constructed for Fort Worth division at Convair's AF Plant 19. With him, from left, are R. J. Patton, FB-111 program director, and F. E. Armstrong, FB-111 chief project engineer, both from Fort Worth, and Mort Rosenbaum, Convair manager of Lindbergh Field aircraft programs. Center shot shows near-completed boom in work before shipment to Fort Worth in mid-December. Assemblers are Eugene Landry, E. E. Yturralde, and M. R. Brown. In photo at far right, W. S. Stroud, Convair program manager for F-111 airborne elements, shows electronics bay to Cdr. J. O. Rice, chief of production, F-111 System Program Office, and Ralph Raney, DCAS Representative's Office, at left. First electronics bay was factory complete first part of last month.

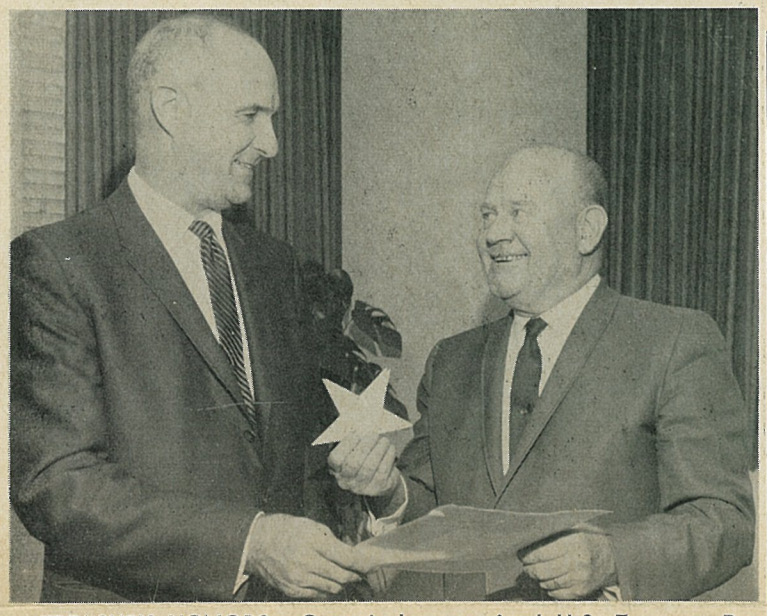


DATA BY VIDEO—Convair Parts Data Bank makes fast search of parts data on request and projects findings on remote television monitors. From left, E. J. Reid, data bank manager, discusses parts drawings by phone as it is transmitted by TV camera; R. A. Taylor looks over microfilm rolls containing information on parts available from 5,000 vendors; Fred Scholer operates Filmsort 2000 machine that produces microfilm aperture cards from "hard copy"; M. G. Williams, parts engineer in Dept. 562-2, takes information at remote station as Robert Keyser, electronics engineer in Dept. 551-3, looks on.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 2 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, January 25, 1967



TREASURY HONORS—Convair has received U.S. Treasury Department citation for "patriotic service in support of U.S. Savings Bonds program." Citation and "stars" were presented to Jack L. Bowers, left, Convair general manager, by O. S. Fuquay, Savings Bonds Division area manager. Total of 71.3 per cent of Convair employes purchase bonds directly through payroll deductions. Overall Corporation participation in bond-buying stands at 63 per cent with 20,000 new purchasers added during last drive.

Data Products to Open Facility in El Cajon

Data Products division of Stromberg-Carlson signed the lease on a 43,000 sq. ft. facility in El Cajon early this month in an expansion of the division's operations in the San Diego area.

Carl V. Shannon, Data Products general manager, said that the new plant will be used for Data Products' greatly-expanded manufacturing operations with first occupancy expected by the last of February.

The new facility, located at the intersection of West Main and Johnson Sts., will be devoted mainly to manufacturing components for micromation technology systems recently developed by Stromberg-Carlson.

Micromation technology consists of an integrated family of equipment that translates computer data into readable language at extremely high speeds.

Extensive remodeling of the building, a former health club, is now under way under direction of R. E. Dieter, Data Products plant engineer. The entire building will be air conditioned, office space will be modernized, and the remainder of the plant developed into a modern electronics assembly line. The 3½-acre site, on which the building is located, provides parking space for 180 cars.

Expected to make the move to the El Cajon plant are functions reporting to Ivan L. Kemper, manager of operations. These include Charles Licastri, superintendent of manufacturing; Dieter, plant engineer; Robert Hickok, supervision of production engineering; Dan Macey, chief of material; and R. K. Barnett, chief of quality assurance.

Main industrial relations offices, under direction of Jack W. Swank, manager of industrial relations, also will be relocated at the El Cajon site.

Remaining at the San Diego plant, 1895 Hancock St., will be engineering, accounting, and marketing operations.

Approximately 100 persons will be employed at the El Cajon plant at the start, with an ultimate work force of 250 or 300 expected. Total employment of S-C Data Products, as of the first of this year, was at 400 persons, a 25 per cent increase in the last six months.

Data on Parts Concentrated in 'Bank' on Mesa

Convair division's new Parts Data Bank, with more than three million pages of parts information on file in a single room in Bldg. 33 at Kearny Mesa, is using microfilm, computer and closed-circuit television techniques in providing a wide range of services for engineers. Included is data on all parts involved in Convair products.

Feasibility of consolidating all available parts information into a single "bank" and relaying information by closed-circuit TV was demonstrated during a two-month study using remote TV monitors in Bldgs. 26, 4, 5 and 33 at Kearny Mesa.

Romie A. Taylor, chief of parts and standards engineering, said economic feasibility of the system will be evaluated during the next six months with additional monitors at Lindbergh Field. Information will be beamed to LF from KM via Mt. Soledad, through Pacific Telephone Co. equipment.

Engineers needing information from the bank may phone KM ext. 2356.

Future plans are for 30,000 parts in 54 categories to be recorded on computer tape and a digital computer in Bldg. 4 at Kearny Mesa tied into the system as needed for in-depth indexing and search.

Taylor said use of the bank in conjunction with the computer will permit "instantaneous updating" of information and "rapid" search.

Edward J. Reid manages the bank with Fred Scholer assisting. The bank includes drawings,

(Continued on Page 2)

Management Film Series Scheduled

The film series on management problems held weekly under Convair Management Club sponsorship has been changed to Monday afternoons at the Lindbergh Field plant.

Films are shown at 4:45 p.m. in the Bldg. 14 auditorium. C. D. King, Dept. 592-0, is discussion leader.

Reservations for the one-hour film showings are not necessary and regular attendance is not required.

New Craftmanship Awards Criteria Set

Two types of awards — sustained performance certificates and achievement banners — may be earned by Convair division departments for outstanding performance this year under new awards criteria recently announced for the division's Convair Craftsmanship program.

The large, framed sustained performance awards will be presented twice annually to departments that during the previous six months have achieved their quality goal.

Each of 45 departments that have been competing for "Craftsman of the Month" honors will have 1967 goals computed on their average 1966 monthly quality performance with a 20 per cent "improvement objective" added.

Other departments may work for awards with goals also computed on 20 per cent improvement over demonstrated performance.

The division's Program Control Board also may elect to present a special award to a department or a group from time to time for "outstanding progress" or outstanding work on a short term special project.

Craftsmanship achievement banners will be awarded at three-month intervals to one department or function under each division staff member.

The Program Control Board with division staff representatives will review graphs and charts on which each department or function has been recording progress toward its goals during the previous three months. Selection of winners will be based on performance, quality, and realism of the goals. W. E. Magnuson is chairman of the Convair Craftsmanship program. Members of the Program Control Board and departments they represent are W. F. Weidenfeller, 130-3; G. J. Gonlag, 194-0; J. M. Kline, 731-0; Sam Petcher, 146-3; W. F. Rice, 146-3; A. R. Zullo, 149-0; and T. W. Ochodnicky, 520-0.

Division staff representatives are E. G. Callard, reliability control; J. A. Croft, industrial relations; E. D. Heller, finance; Manuel Moseley, Lindbergh Field operations; H. L. Williamson, Kearny Mesa operations; Fred Lee Jr., launch vehicle programs, and Ochodnicky, research and engineering.

Both the sustained performance certificates and achievement banners will be presented by Jack L. Bowers, division general manager, or the division staff member under which the winning department functions.

1966 Cost Reduction Target Exceeded at Lindbergh Field

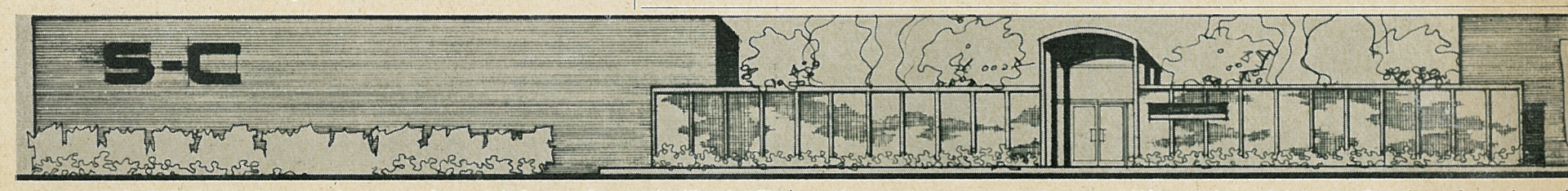
Convair's Lindbergh Field operations exceeded its 1966 cost reduction goal by the healthy margin of a quarter of a million dollars and will aim this year at a target of $2.3 million, nearly double last year's figure.

Cost reduction goals for 1967 have been established on a commensurate level with the forecasted operations at the Lindbergh Field plant for the current year, explained R. B. Thompson, LF cost reduction and value control coordinator.

"These new goals can be achieved through continued interest by all departments and the all-out efforts which put us over the top last year," W. L. Van Horn, Lindbergh Field plant manager, said.

A break-down of targets for operations departments is: Dept. 001 (sheet metal), $147,400; Dept. 002 (processing), $95,100; Dept. 005 (mats manufacturing), $90,600; Dept. 015 (machine shop), $197,600; Dept. 016 (electric bench), $121,400; Dept. 019 (metalbond, plastics and trim), $72,400; Dept. 024 (Convair 600), $21,300; Dept. 027 (F-111 assembly), $201,600; Dept. 031 (experimental), $159,400.

Dept. 041 (C-141 empennage assembly), $95,600; Dept. 045 (C-5 empennage assembly), $104,200; Dept. 049 (non-current spares production), $20,500; Dept. 056 (product development and service), $82,300; Dept. 059 (shop load and spares), $173,500; Dept. 149 (LF reliability control), $153,100; Dept. 400 (tool design and planning) $140,200; Dept. 401 (tool manufacturing), $488,400.



NEW S-C PLANT—Architect's drawing of partial front of new facility in El Cajon, Calif., now being renovated for Stromberg-Carlson Data Products. Building and over three acres at corner of West Main and Johnson Sts., have been leased by Data Products as operations plant.

35 YEARS—Elmer T. Gahlbeck, Dept. 031, experimental department at Lindbergh Field plant, received 35-yr. service emblem from Convair General Manager Jack L. Bowers early this month.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Jan. 15 and Jan. 31.

Thirty-year: Dept. 149, H. L. Laird; Dept 193, A. A. Vernon.

Twenty-five-year: Dept. 041, J. P. Gomez; Dept. 053, M. R. Yale; Dept. 143, J. F. Baebler; Dept. 250, M. A. McLean, S. G. Whitten; Dept. 566, S. W. Mopps; Dept. 756, M. Fitzgerald; Dept. 972, F. B. Presley; Dept. 974, J. D. Willingham; Dept. 987, M. S. Dace.

Twenty-year: Dept. 143, W. E. Ely; Dept. 170, M. C. Ross; Dept. 195, A. F. Jones; Dept. 250, F. M. Henderson; Dept. 300, J. A. Contasti, P. E. Desbiens; Dept. 452, E. G. Mowery; Dept. 700, H. P. Moore; Dept. 780, H. T. Walsh; Dept. 835, A. Amison Jr., E. E. Darling.

Fifteen-year: Dept. 019, E. S. Christianson; Dept. 059, T. E. Jensen, P. Markovich; Dept. 123, H. C. Faber, R. W. Johnson; Dept. 130, R. O. Botkins, H. E. Osborn; Dept. 131, C. A. Zamora; Dept. 142, A. W. MacRae, Dept. 149, J. Cannizzaro; Dept. 250, J. H. Gahagan, F. Tellez; Dept. 300, H. F. Dale; Dept. 400, V. B. Jones, L. B. Werts; Dept. 420, G. W. Fisher; Dept. 512, J. R. Weighill; Dept. 544, R. J. Bjorstrom; Dept. 551, R. W. Weber; Dept. 566, J. N. Megargee Jr.; Dept. 578, W. F. Lutes; Dept. 587, J. R. Hotz; Dept. 595, N. J. Withem; Dept. 756, E. D. Brannon; Dept. 832, P. Cook, W. G. Dill, A. P. Weber; Dept. 840, G. E. Harris; Dept. 850, A. C. Rath; Dept. 957, J. W. Coody; Dept. 961, J. S. Comber; Dept. 979, E. L. Hayes; Dept. 987, G. Lund, C. E. Weber.

Ten-year: Dept. 001, J. R. Hanson, E. M. Humphries; Dept. 041, H. E. Gaugh Jr.; Dept. 059, H. P. Crook, M. A. Herring, S. J. Sorokie; Dept. 110, D. C. Sylvester; Dept. 123, W. M. Jessup; Dept. 130, M. J. Ruebel; Dept. 141, W. G. Lux; Dept. 144, B. R. Hofer; Dept. 145, W. T. DeFrance; Dept. 250, D. F. Mous, T. A. Sickich, M. E. Strickland Jr.; Dept. 300, L. Reza; Dept. 401, C. H. Stringfield; Dept. 405, J. Hancock Jr.; Dept 420, D. L. Williams; Dept. 423, E. W. Allen.

Dept. 507, P. O. Rowland; Dept. 521, S. M. Flores; Dept. 524, B. N. Reynolds; Dept. 543, J. A. Thayer; Dept. 551, L. C. Kunkle; Dept. 563, L. B. Robin; Dept. 585, T. L. La Gue; Dept. 596, R. Bartle; Dept. 733, W. K. Conley; Dept. 780, F. E. Aguliar, A. M. Jorens, B. A. Poulin, R. M. Senior; Dept. 835, J. A. Inglish; Dept. 840, W. F. Capriotti; Dept. 951, E. J. Gravelle; Dept. 957, V. C. Prestage; Dept. 963, M. C. Castro Jr.; Dept. 973, J. P. Gimbel; Dept. 979, J. A. Haser, V. V. Jones, W. M. Marrs, L. Speigner Jr., J. D. Vester; Dept. 984, L. M. Nelson; Dept. 985, J. F. Ervin.

ELECTRONICS-SD

Service emblems due during the month of January.

Twenty-five-year: Dept. 40730, S. O. Adams; Dept. 68530, A. R. Zagon.

Fifteen-year: Dept. 40730, R. J. Hogan; Dept. 64780, A. N. Branom, E. C. Martin.

Ten-year: Dept. 40730, A. M. Marsh; Dept. 40750, F. E. Plumley; Dept. 65740, W. H. Childs, C. D. Safford; Dept. 66770, P. E. Daniels; Dept. 68540, L. G. Karel; Dept. 68670, M. S. Landos; Dept. 68690, D. J. Hollman.

STROMBERG-CARLSON

Service emblems due during the month of January.

Fifteen-year: Dept. 80-20, M. F. Brawner; Dept. 85-60, H. B. Cody.

Ten-year: Dept. 84-11, P. H. Nelson; Dept. 86-10, L. A. Broekemeier; Dept. 86-21, L. R. Boyd, A. R. Hanslow, H. G. Murk; Dept. 88-10, D. E. Johnson.

Awards

Employe Suggestion awards approved for the week ending Dec. 22.

Dept. 015, J. B. Denton; Dept. 041, G. A. Hasti; Dept. 101, C. L. Ford (two awards), J. V. Seward; Dept. 123, G. C. Gonzalez; Dept. 130, W. E. Fowler Jr., B. J. Jones; Dept. 251, W. E. Gille; Dept. 551, W. W. Craft; Dept. 780, M. S. Calahan, M. B. Clapper; Dept. 832, N. W. Johnson; Dept. 833, R. J. Grand; Dept. 974, F. Isler, W. J. Lewis; Dept. 979, W. C. Mitchell; Dept. 987, W. L. McDougal.

Employe Suggestion awards approved for the week ending Jan. 6.

Dept. 015, L. W. Tracy; Dept. 019, D. R. Wilson; Dept. 024, J. T. Fenwick; Dept. 130, N. C. Buell, J. H. Cooper, B. J. Jones; Dept. 143, J. F. DuBois; Dept. 149, M. H. Parrish, E. G. Smith, R. Steele, S. Witkoff; Dept. 454, F. Yochim; Dept. 717, O. L. Riddle; Dept. 756, R. B. Hayes; Dept. 780, M. E. DePriest; Dept. 816, J. M. Somers; Dept. 832, E. M. Christensen; Dept. 833, J. Giamanco; Dept. 835, L. L. Yarbrough; Dept. 972, R. D. Harvey, R. L. Robinson; Dept. 973, D. J. Melvin; Dept. 979, E. B. Kelley, P. J. Poulos, R. W. Suess; Dept. 987, H. I. Greenwood, W. L. McDougal, C. W. Neal (two awards), R. L. Witt.

Employe Suggestion awards approved for the week ending Jan. 13.

Dept. 015, M. E. Long; Dept. 024, R. E. Cloud; Dept. 101, F. S. Pierce; Dept. 130, D. E. W. Dunn; Dept. 143, J. S. Adams, M. Howell, W. D. McNeil, H. D. Sterling; Dept. 149, W. C. Bowen, H. C. French, R. M. Steele; Dept. 250, L. E. Ford; Dept. 420, L. W. Raper; Dept. 454, G. W. Lyst; Dept. 715, C. E. Schultz; Dept. 733, R. E. Reeves, H. Staten Jr.; Dept. 758, J. S. Good; Dept. 780, J. DeVenere; Dept. 816, L. W. Hesseltine; Dept. 957, C. E. Wheary; Dept. 985, E. R. Schwabel; Dept. 987, D. R. Conk (two awards), W. M. Eddings (two awards), W. C. Faulkner, L. M. Hernandez, W. L. McDougal, J. W. Magnuson, J. F. Mayer, C. E. Roach Jr. (four awards).

Retirements

CONVAIR

BROWN—Norman W., Dept. 001-0. Seniority date June 13, 1956, retired Dec. 29, 1966.

CHRISTIAN—George W., Dept. 049. Seniority date June 3, 1936, retired Dec. 29, 1966.

DEMOS—Lila K., Dept. 002-2. Seniority date Dec. 20, 1950, retired Dec. 30, 1966.

GAINES—Ola E., Dept. 979-3. Seniority date Feb. 24, 1958, retired Dec. 12, 1966.

KRAVITZ—Valentine J., Dept. 15-0. Seniority date Aug. 19, 1948, retired Dec. 29, 1966.

MORENA—Octaviano G., Dept. 015. Seniority date May 7, 1952, retired Dec. 29, 1966.

NORSE—John, Dept. 565-1. Seniority date March 3, 1952, retired Dec. 29, 1966.

STANEK—Ernest R., Dept. 731-0. Seniority date June 16, 1941, retired Dec. 29, 1966.

WATWOOD—George B., Dept. 250-3. Seniority date May 1, 1954, retired Dec. 29, 1966.

Technical Papers

CONVAIR

GOLDMAN—A. M., Dept. 589-1. "Optization of Manned Lifting Re-entry Vehicles Using the OCOOF Technique," American Astronautical Society's Missiles & Aerospace Vehicle Sciences Symposium, Huntsville, Ala., Dec. 5-7.

WALBURN—A. B., Dept. 584-2. "An Analytical and Experimental Examination of the Effect of Cryogenic Propellant Venting on Orbital Vehicle," American Astronautical Society's Missiles & Aerospace Vehicle Scienses Symposium, Huntsville, Ala., Dec. 5-7.

Invention Disclosures

CONVAIR

BROCKWAY—R. L., Dept. 978-3. Telephone Advertizer (Tel-Ad).

HUJSAK—E. J. and W. J. KETCHUM, Dept. 952-5. Consumable Rocket—Single Stage to Orbit.

McMENAMY—C. F., Dept. 566-3. Device for Eyes Relaxation — Spectacles with Aberrative Control.

Deaths

CROTHERS—J. Ray, Dept. 400-2. Died suddenly at Fort Worth Jan. 4. Survived by three daughters in San Diego.

VANDENBERG AFB

SORVIG—Raymond E., Dept. 985-4. Died Jan. 2. Survived by wife, Eileen H.

Rider-Driver

RIDERS WANTED—From Allied Gardens to Lindbergh Field. 7:00-3:30 shift. Call Frank Dewey, 582-7645.

RIDE OR CAR POOL—From Diamond St., Pacific Beach to Lindbergh Field. 7:30-4:15 shift. Call Janet Goff, ext. 1657.

Personals

CONVAIR

I wish to express sincere appreciation to my many Convair friends and especially to the Con-Trib-Club for the sympathy and assistance received during the hospitalization and recent death of my son, Fred E. Danner, III.

Connie Danner
Dept. 592-0

* * *

The family of LaVern "Lee" Severson, Dept. 951-4, acknowledges with deep appreciation the kind expressions of sympathy at his death.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N.Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Reliability Control Ups Participation In ESs With Goals

Reliability control department topped other major Convair division departments last year by submitting 585 Employe Suggestions that will save the division $95,000. Personnel participation in the suggestion program was 92 per cent.

Eric Callard, cost reduction program administrator for the department, credited departmental goal setting under the Convair Craftsmanship program with doing much to stimulate submittal of ideas.

Last July when each department or function within the division was asked to establish and work toward realistic individual Craftsmanship goals, L. I. Fredrickson, supervisor for financial controls Dept. 140-1, was one of several reliability control supervisors who realized few suggestions were being submitted by his group.

Dept. 140-1 set a goal of one suggestion for each of its 26 non-supervisory employes and began charting progress on a wall chart. Employe Suggestion forms were available at the chart board.

During the last six months of the year, members of the group submitted 56 suggestions — an average of more than two for each eligible employe and more than double the goal established.

600 Conversion Award Winner

Employes working on Convair 600 aircraft conversion in Dept. 024 at Lindbergh Field won "Craftsmen of the Month" honors in December with a 123.1 quality index rating.

The department improved its performance by more than 75 per cent by reducing number of defects from .56 per 100 man-hours worked during the past six months to .13 during the past three months. Dept. 024 had previously won honors in July.

Runner-up departments in the December competition were Dept. 836, the first-cut operation at Lindbergh Field, with a 121.0 quality index rating and Dept. 972, Centaur final assembly at Kearny Mesa, with 117.4.

The December competition was the last of its kind in the Convair Craftsmanship program, which has been revised to include a new departmental awards system.

Weight Engineers Will Meet Friday

Members of the San Diego chapter of the Society of Aeronautical Weight Engineers (SAWE) will meet Friday (Jan. 27) in Mission Room at Mission Valley Inn with social hour at 6 p.m. and dinner at 7.

A color film of the Atlas-Centaur launch of Surveyor I will be shown. H. L. Jensen Jr. of Convair's Dept. 963-4, SAWE international president, will preview the SAWE annual meeting to be held in Boston in May.

Reservations should be made by noon tomorrow (Jan. 26) with Jeweline Richardson, KM ext. 2296.

STROMBERG-CARLSON

We wish to express our sincere thanks to all of our friends for the many remembrances and kindnesses received during the illness and death of Ernie Paul.

Mrs. Ernie Paul and son, Richard.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Lindbergh Field, ext. 491. Bldg. 14 auditorium, Tuesday, Feb. 7, 8 a.m., and Wednesday, Feb. 8, 4:30 p.m. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, Monday, Feb. 6, 8 a.m.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931, Kearny Mesa.

Lost & Found

CONVAIR

LOST—Bracelet, double row of green beads with gold clasp. Lindbergh Field plant. Reward. Gertrude Hunter. Ext. 570 LF.

★ Did You Know? ★

(General Dynamics people enjoy numerous advantages and high on the list are those usually referred to as "employe benefits." There are many of them, each designed to complement the others and together form a balanced program for the welfare of the individual. As a reminder, GD/NEWS is carrying a series of brief articles touching upon first one benefit and then another. Some, perhaps, you may not have known existed.)

★ ★ ★

Treatment for job-related injuries or illnesses is provided in-plant by Convair's medical department. When more extensive care is required in such cases, the employe receives authorization and is referred by the medical department to a specific specialist or hospital.

On holidays and at times when central medical is closed, the employe should contact the Convair fire department for instructions on how to obtain authorized care. If authorization is not obtained, cost will not be paid by Insurance Companies of North America (INA), the Company's industrial accident insurance carrier.

The same procedure applies to all Convair, Electronics-SD and Stromberg-Carlson employes in the San Diego area. Aetna group health insurance does not provide compensation for job-related accident or illness medical care. Questions may be directed to Convair central medical, KM ext. 721 or LF ext. 591.

COMMENDED—Frank Blair (left), Convair Lindbergh Field factory manager, hands Certificates of Commendation for approved Cost Reduction Proposals to G. H. Wilson (Dept. 027), R. A. Davis (Dept. 020), and G. D. Carroll (Dept. 005). A. T. Landry (Dept. 031), who also earned CR honors, was not present.

Variety and Imagination Mark Cost Reducing Ideas at LF

A laundromat for in-plant laundry of white gloves and a work platform "cherry picker" for easier installation of test equipment at the structures test lab are among Cost Reduction Proposals put into effect at Convair's Lindbergh Field plant to save the division thousands of dollars.

Frank Blair, Lindbergh Field factory manager, presented Certificates of Commendation early this month to four Convair assistant foremen whose cost savings ideas will save nearly $112,000 over the next year. Receiving awards were G. D. Carroll of Dept. 005, mats manufacturing; R. A. Davis of Dept. 020, F-106 fuel tank and pylon assembly; G. H. Wilson of Dept. 027, F-111 assembly; and A. T. Landry, Dept. 031, experimental.

Carroll's suggestion to install a washing machine and dryer in the airfield landing mat production area for laundry of workmen's gloves in-plant will save $7,050 by the end of this year.

When sent to an outside laundry, 30 per cent, or 240 pairs of the 800 used each week, had to be replaced. Now, with in-plant laundering facilities, less than 40 pairs have to be replaced each week. Cost of equipment was $500.

Carroll is credited with a whopping $104,886 in savings through all of his Cost Reduction Proposals approved in 1966.

Davis' improved methods in F-106 fuel tank and pylon assembly will save a total of $50,541 in labor.

Wilson's three CRPs, saving $47,322.50, eliminate hand layout in drilling DC-9 components by use of drill templates on the bench before parts go into fixtures.

Landry originated the concept of an adjustable work platform adapter to be used for test installations on the F-111 static test article in structures lab at Harbor Drive Test Site. The welded steel boom is topped by a steel basket roomy enough for two men and tools. The boom can be lifted and maneuvered by a hyster. Formerly, engineers and technicians setting up tests were suspended in a canvas bosun chair from an overhead crane.

Data on Parts Concentrated

(Continued from Page 1)

specifications, supplier catalogues, supplier evaluations and data on usage, test, history, cost, availability.

The bank is located so that engineering parts specialists may be called as needed to interpret information or give a "chalk talk" by phone and TV for engineers in another part of the division.

Most of the TV equipment is on loan from motion pictures and television Dept. 124-0. The video system was installed by Charles N. DeMund of Dept. 124-0.

Remote TV monitors now in use are at the microfilm viewing station at Col. G-18 in Bldg. 26, the reliability area at Col. F-8 in Bldg. 4, the test lab at Col. S-21 in Bldg. 4, the quality control area at Col. B-6 in Bldg. 5 and the advanced autopilot group area at Col. F-13 in Bldg. 33 at Kearny Mesa.

SALVAGE SALES SLATED FEB. 4

Next employes sales day at the Lindbergh Field salvage yard will be Saturday morning, Feb. 4, from 8 a.m. until noon. General Dynamics people are admitted by ID card. Sales days are scheduled regularly every fourth Saturday.

Review of Technology Staged for Military

General Dynamics is presenting a Technology Review for the U. S. Air Force Research and Technology Division today and tomorrow (Jan. 25-26) in San Diego.

Representatives from the Air Force, Department of Defense, NASA, Army, Navy and other governmental agencies are attending at the invitation of Maj. Gen. Marvin C. Demler, commander of the Research and Technology Division, Air Force Systems Command.

Convair and General Atomic divisions are hosts. Technical and laboratory sessions are being held in Convair's Kearny Mesa, Lindbergh Field and Harbor Drive facilities and at General Atomic.

Twenty-two technical papers are being presented by representatives of eight of General Dynamics' major operating units — Convair, Electric Boat, Electronics, Fort Worth, General Atomic, Pomona, Stromberg-Carlson Corp. and Canadair Ltd.

Military officers and others in San Diego for the review were welcomed before the opening technical and laboratory sessions this morning by Edward H. Heinemann, General Dynamics vice president-engineering and program development.

Following, listed by major subject area, are titles of papers being given with names and divisions of those speaking:

Nuclear Sciences — "A focused plasma accelerator for simulation of nuclear weapons effects," Dr. B. B. Dunne, General Atomic; "Interaction of laser radiation with matter," Dr. K. D. Pyatt Jr., General Atomic.

Life Sciences — "Regenerable life support systems," G. L. Drake, Convair; "Life support," A. H. Petrocelli, Electric Boat.

Information Sciences—"Plated-wire memories," T. F. Bryzinski, Stromberg-Carlson; "Information storage and retrieval-concept of flexibility," C. C. Dragila, Convair; "Microwave hologram, wavefront reconstruction and visible images," G. Tricoles, Electronics.

Aero-Thermodynamics—"Aerodynamic refinement of subsonic/supersonic aircraft," J. B. Miles Jr., Fort Worth; "Simulation techniques for V/STOL vehicles," T. A. Stenning, Canadair.

Flight Control and Dynamics—"Dynamic loads in variable-geometry aircraft," T. B. Epperson, Fort Worth; "Fluidic applications," W. M. Rowell Jr., Fort Worth.

Guidance—"Strapped-down inertial guidance systems: a simplified mechanization," F. I. Backus Jr., Convair; "Radar homing," R. R. Roberts, Pomona.

Detection and Seeking—"Laser radar," E. H. Ritter, Pomona; "Target location in limited war," R. L. Deans, Canadair.

Electronics — "Transient radiation effects on microelectronics," R. A. Poll, General Atomic; "Electronic tactical communications switching systems," John Guenther and William Oswald, Stromberg-Carlson; "Optical communications systems," Dr. J. E. Taylor, Electronics.

Propulsion and Power—"Electric propulsion development," Dr. A. V. Larson, Convair; "Thermionic reactor development for electric propulsion and auxiliary power in space," Dr. R. W. Pidd, General Atomic.

Equipment — "Digitized airborne electronic reconnaissance equipment," L. J. Lader, Pomona.

Materials and Processes — "Boron composites applications," L. L. Patton, Fort Worth.

The Air Force officers and others attending have been divided into three major groups of about 70 each with each of these divided into sub-groups for the technical and laboratory sessions and plant tours.

In-depth seminars on topics in eight of the major disciplines will be held tomorrow afternoon at Kearny Mesa, with each person attending the seminar of his choice.

Planning for the Technology Review, the 13th being presented by industry for the Research and Technology Division, is under the direction of Bruce McKay and Karel J. Bossart of Convair division and Warren J. Eding of General Dynamics' Corporate Headquarters.

McKay said the 22 technical papers were chosen by the Air Force from 224 abstracts presented for consideration.

The Air Force Research and Technology Division is composed of the Air Force propulsion, armament, weapons, flight dynamics, aero propulsion, avionics and materials laboratories, the Rome Air Development Center and the Systems Engineering Group.

Is it news? Pick up a phone and call GD/NEWS

Savings, Stock Plan 'Open' For February

Enrollment in the General Dynamics Savings and Stock Investment Plan will be open throughout February. All employes who are not now members of the Plan, or those who have established eligibility by being with a Company a full year, may sign next month for the quarter beginning April 1.

No other notice will be given employes of their eligibility.

Also, all changes in investment option or percentage of savings must be made by Feb. 28 for the following quarter.

Prospectuses and forms are at employe services offices at both Convair plants.

EDUCATOR PAYS VISIT TO CONVAIR

Dr. H. Guyford Stever, president of Carnegie Institute of Technology, visited Convair division's Kearny Mesa plant recently while in San Diego to speak at an alumni meeting.

Grossmont Evening Students Do Lab Work on KM Computer

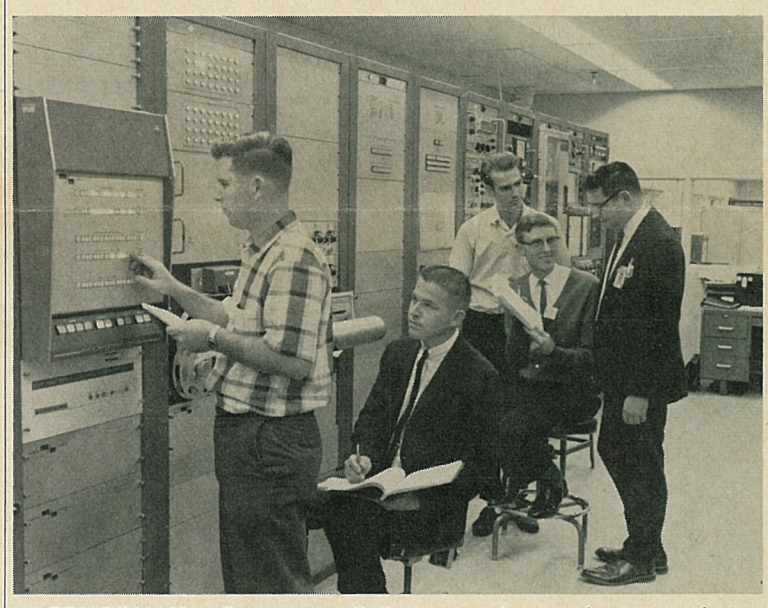
Grossmont College evening students are using a computer at Convair division's Kearny Mesa plant in an "Introduction to Digital Computers" course being taught by William D. Tester, a senior laboratory test engineer in Convair's Dept. 578-4.

Six students in the initial fall semester class have been attending lecture sessions from 7 to 10 p.m. Mondays at the college, and laboratory sessions from 6 to 9 p.m. Wednesdays at Kearny Mesa. A spring semester class begins Feb. 6.

The course is designed for the technician or engineer who wants an introduction to a small-systems-type digital computer and its peripheral equipment for on-line data acquisition.

A Data 620 digital computer being used is located in a test laboratory in Bldg. 4 and is connected with six other test laboratory locations at Kearny Mesa.

Tester said the students write their own programs for the computer, which takes data, runs tests, compiles reports and prints test information.



COLLEGIANS—Grossmont College evening students are being taught by W. D. Tester, standing at right, to use digital computer at Convair's Kearny Mesa plant. Students, from left, are Gerald M. Skomal, Ernest G. Smith Jr., James K. Whitney and Michael Oberbauer.

Con-Trib-Club Gifts Reach Servicemen For Christmas

Convair Employes' Con-Trib-Club has received several letters from servicemen in Viet Nam expressing appreciation for "ditty bags" filled with Christmas gifts received in the field from Convair employes through the American National Red Cross.

Con-Trib-Club in October provided $2,000 for 1,000 of the gift packages, each of which contained a lighter, ball-point pen, nail clipper and file, playing cards, small game, address book, package of writing paper, foot powder, and a greeting card from Convair.

1st/Sgt. Russell C. Hall wrote Christmas day expressing appreciation for all the men in A Co., 459th Signal Bn. "I have 190 men in my company and each and every one got a package," he said. "We are glad to know you are thinking of us."

Pfc. Clarence E. Summers of the 148th S & S Co., said he received his package Dec. 26.

"Just knowing a company or group of people such as yourselves are willing to share a part of your Christmas with an American 'G.I.' makes a lot of us much happier," he wrote.

Sgt. William Hatfield of Co. B, 54th Signal Bn., wrote to "thank you for making my Christmas a little brighter, not just for myself but for most of the men in the 54th Signal."

Randy Boatwright of the 167th Signal Co. wrote, "This gift helped a lot to make it seem like Christmas."

"It's nice to know the people in the states are thinking about us," he added.

Pfc. Ray C. Fisher, also of the 167th, said he and other men in the company "are thankful for the backing we get from home."

SP/4 Gene D. Miller of Flint, Mich., said the gifts from Convair were the only ones he received for Christmas since he had been in Viet Nam only since Dec. 19 and mail from home hadn't yet reached him.

LEONDIS TO HEAD ALUMNI DRIVE

Alex F. Leondis, a design specialist in Convair division's launch vehicles structural dynamics Dept. 966-9, has been appointed San Diego area chairman of the Illinois Institute of Technology national alumni campaign.

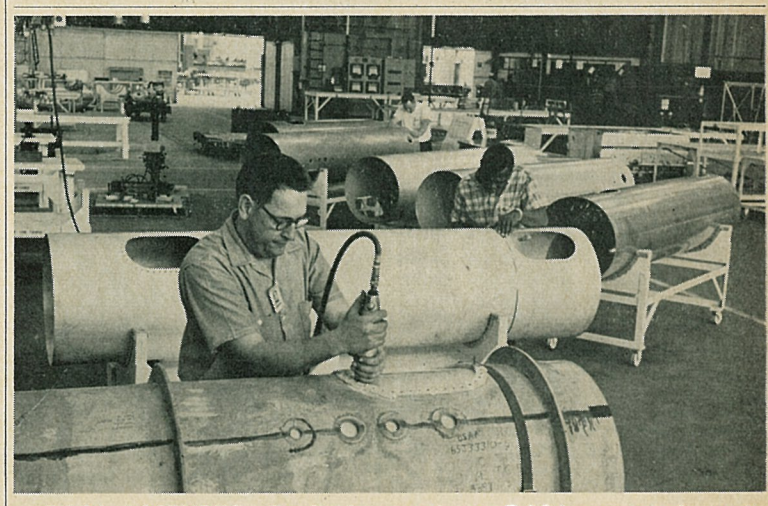
People Mobility

Interdivisional Transfers

(Following are recent personnel transfers among General Dynamics divisions. In parentheses are dates when individuals joined the company.)

WILLIAM J. CONNELLY (1963) from Convair division to plant engineering, Fort Worth; **ERNEST I. STUCHLY** (1954) from Convair to airframe & mechanical design, Fort Worth; **ROY E. SIMS** (1950) from Convair to Fort Worth; **MAURICE B. BECK** (1950) from Convair to Electronics, San Diego, as general accountant; **ARCHIBALD N. BOWDEN** (1955) from Electronics, San Diego, to Convair as senior price estimater; **OSBORN H. JOHNSON** (1956) from Electronics, San Diego, to master schedules analyst, Convair; **WALTER R. MANDEL** (1958) from Electronics, San Diego, to senior electronics engineer, Convair; **DONALD J. CLARK** (1958) from Convair to General Atomic; **WILLIAM W. WILIMEK** (1956) from Convair to Canadair Ltd.; **HANS H. BUSCH** (1955) from Convair to Electronics, San Diego, as senior planning & control analyst.

TREVOR G. HAME (1961) from Electronics, Rochester, to Electronics, San Diego; **JAY R. COLVIN** (1959) from Electronics, Rochester, to Stromberg-Carlson, San Diego, as industrial relations rep.; **LYLE E. MOORE** (1960) from Electronics, Rochester, to cost estimator, Convair; **WILLARD S. WILSON** (1950) from Convair to Electronics, Rochester, as superintendent of manufacturing operations.



F-106 ASSEMBLY—Production work on F-106 supersonic tanks is now under way at AF Plant 19 with above shot showing build-up of center sections in Bldg. 7 (paint shop). Bob Hansen routes door opening in foreground while Jim Wilkins measures diameter of section. Leadman R. C. Beezley (in background) positions tank section on its own individual carrier.

F-106 Fuel Tank, Pylon Work Goes to Plant 19

F-106 fuel tank and pylon assembly (Dept. 020) has been moved to AF Plant 19 from Bldg. 1 at Convair's Lindbergh Field plant to allow expansion of production operations.

Convair is producing supersonic external fuel tank kits for installation on F-106 aircraft under a contract received last summer from the Air Force's San Antonio Air Materiel Area, Texas. Kits consist of the pylons to attach the tanks to the wings, fuel lines, electrical connections, and associated equipment **(GD/NEWS, July 27, 1966).**

Work on the F-106 tank and pylon assembly program is now being done in Bldgs. 2 and 7 at Plant 19.

First steps in the build-up of the center tank sections are under way in Bldg. 7, paint shop. The large tank skins are carried on individual dollies through the entire process — cleaning by etch process, welding, trim to size, door openings routed, strong back assemblies installed, into the oven for bonding.

Then they are moved to Bldg. 2 for final welding and pressure tests; taken back to Bldg. 7 for painting; and to Lindbergh Field plant for shipment.

Russ Davis is in charge of F-106 tank and pylon work as assistant foreman. At present, nucleus of the work force includes leadman R. C. Beezley and four assemblers. However, the crew will build up to 35 or 40 employes within the next couple of months.

Production of F-102 pylon and F-102 in-flight refueling receptacles remains in Lindbergh Field's Bldg. 1. B. L. Wolfe is assistant foreman for F-102 pylons; and Tony Berardini, F-102 receptacles. All report to G. K. Cox, general foreman.

Con-Trib OKs Gifts, Pledges Worth $19,260

Twelve community service organizations have received allocations and pledges totaling $19,260 in two recent meetings of the Convair Employes' Con-Trib-Club committee.

Boys Clubs of San Diego County received a $6,000 pledge, payable in three annual installments, for use toward financing of a swimming pool facility at its Clairemont branch.

San Diego City and County YMCA received $2,500 for use toward repair of water and sewer lines at Camp Marston.

The National Foundation was given $3,000, designated for Salk Institute for Biological Studies; International Guiding Eyes, Inc., $1,500; Big Brothers of San Diego County, $1,000; Volunteers of America, $1,500, including $1,000 for building payments; and Blue Star Mothers of America, $200.

On recommendation of Vandenberg AFB employes, the Salvation Army in that area received $1,000 and, as recommended by Los Angeles area employes, $455 was granted to the United Crusade and $255 to Children's Hospital of Orange County.

Muscular Dystrophy Associations of America received $1,500 for a new clinic at Children's Hospital in San Diego and the San Diego County Mental Health Service was allocated $350 for a washer and dryer for its children's in-patient service.

Newman Appointed British Firm Rep.

H. D. Newman has been named representative for Hawker-Siddeley Dynamics (HSD) at Fort Worth division.

The firm is under contract to the British government for development and installation of the Martel Weapon System in the F-111K.

In-Plant Courses Will Lead To 'Supervision Certificate'

San Diego City College courses leading to the "Certificate in Supervision" will be offered in-plant through Convair division educational services as a convenience for employes.

An initial required course, "Introduction to Supervision" will be given from 4:30 to 7:30 p.m. Mondays beginning Feb. 6 in Bldg. 17, Room 1, at Kearny Mesa. Harold Rubin, educational specialist in Dept. 130-3, will instruct.

Interested employes may register next Monday through Wednesday (Jan. 30 through Feb. 1) from 4:30 to 5:15 p.m. in Bldg. 17, Room 9. A $1.50 student body fee is payable at time of registration.

Completion of 10 three-unit courses is required for the certificate. A minimum enrollment of 20 students is required for each course.

The introductory course will cover responsibilities of a supervisor in areas such as organization, duties, communication, planning, human relations, training, evaluation and motivation.

Other courses in the curriculum include "Human Relations," "Organization and Management," "Employe Training," "Effective Writing," "Effective Speaking," "Industrial Economics," "Personnel Administration," and "Production Planning."

Employes Offered Self-Study Courses

As part of Convair's Management and Personnel Upgrade program, educational services this week reminded employes that more than 250 self-study programmed instruction texts are available on loan.

Designed so that the student may proceed at his own pace, texts are available in a wide variety of subjects. They include accounting, computers, English, electronics, management, mathematics, mechanics, non-destructive testing, statistics and value engineering. A catalog is available on request at educational services, Bldg. 17, Kearny Mesa. Study time varies from three hours to 50, depending on complexity of the subject.

For additional information, call James Watt, ext. 1931 KM, or visit educational services offices.

Texts normally are checked out for a month, but time may be extended unless on reserve.

Booklets Help College Plans

Convair division educational services offices have a series of booklets to aid employes in assisting their children in planning and financing their college educations.

One pamphlet, "A Guide for Parents and Students," is available upon request at educational services offices in Bldg. 17 at Kearny Mesa and Bldg. 16 at Lindbergh Field.

Others, available on a short-term checkout basis, include "Need a Lift?" (about careers and scholarships), "Financial Assistance for College Students," "You and Your Child's Career," "College Costs Today," etc.

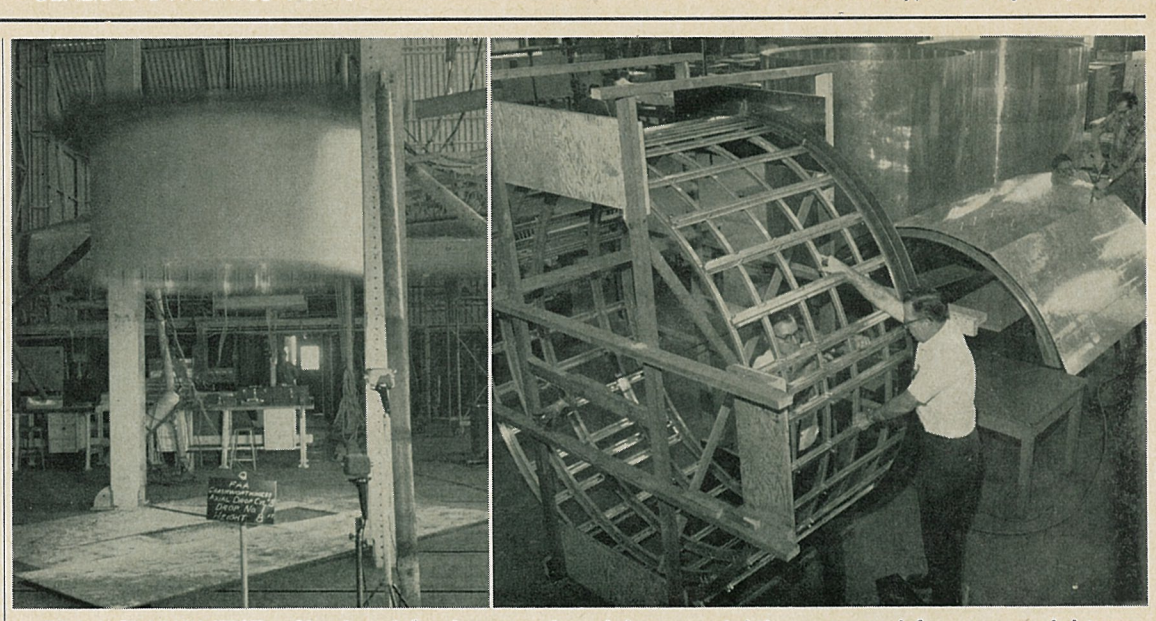
Also for short-term loan are four booklets in a College Kit.

Classes For Adults Will Start Monday

Spring semester classes for adults will start next Monday, Jan. 30, at San Diego Adult School, 12th and Russ Sts. A variety of courses are scheduled to meet the needs and interests of adults. Information on class schedules can be obtained by calling the school office, 233-7402. Schedules also are available at Convair educational services offices.

GARDENERS PLAN ELECTION FEB. 1

Convair Garden Club will elect officers for the coming club term at the Feb. 1 meeting, 7:30 p.m., in the Floral Association Bldg., Balboa Park. Door prizes will be given and refreshments served.



FAA "CRASH" TEST—Simulated fuselage sections (photo at right) constructed for commercial transport crashworthiness study for FAA, are impacted (photo at left) at Convair structures test laboratory, Harbor Drive Test Site.

Convair Specialists Attend Symposium On Metalworking

Abe Hurlich, manager of materials and processes at Convair division, and S. R. Carpenter, senior research engineer in process development, represented the division at the first Air Force Materials Laboratory Metalworking Technology Symposium, held in Las Vegas, Jan. 10-13.

Others attending from Convair were E. D. Green, senior applied manufacturing research engineer; G. I. Baxter, senior manufacturing development engineer; D. L. Ingram, manufacturing development specialist, all of Dept. 491-0.

The Symposium was the first such technical conference on the development of basic metalworking processes for aerospace applications. The several hundred delegates from industries throughout the country heard a description of materials and metalworking process requirements over the next decade.

Main purpose of the meeting was to provide an exchange of information between users and producers.

Simulated Fuselage Sections 'Crashed' in Research For FAA

Convair testing on specimens in its study for the Federal Aviation Agency crashworthiness program is in final stages with one more lateral drop test still to be run this month at the structures test laboratory.

During the last couple of months, test engineers have "crashed" half-a-dozen cylinders or partial cylinders simulating fuselage sections in the effort to determine methods of improving cabin integrity to protect passengers during crash landings.

Already completed are drop tests with loads equivalent to vertical crashes on three partial cylinders — two typical of existing type of aircraft and one reinforced to improve load capability and energy absorption. The partial cylinder still to be tested will be reinforced in a different design.

Three 100-in. diameter cylinders, two 8 ft. long and one 4 ft., also have been tested at the Harbor Drive Test Site. In addition, nine plate and stringer sections have been subjected to compression test machines. Convair's test 880 nose section will end its lifetime of test services when it is demolished in a drop test before the study is concluded.

All specimens were built in Convair's experimental department at Lindbergh Field.

D. L. Greer, Convair project engineer for the FAA study, said that the current study will be finished by April of this year.

More DC-9 Door and Jamb Panels Ordered in Second Follow-on

Convair division received a second follow-on order for DC-9 door and jamb panel units early this month from Douglas Aircraft Co. to bring the total number of ship's sets which Convair will build to 55.

Convair's first order of 24 units will be completed by the end of this month on schedule, M. R. Yale, Convair program manager for Douglas subcontracts, said. First of the initial order was delivered in January, a year ago.

A second subcontract for 16 more ship's sets was signed last October. Fabrication is nearly complete on this lot with final assembly scheduled between now and the end of June, when unit No. 40 is to be completed.

Completion date of the latest order is set for the first of December of this year, with production schedule to be maintained at three a month, Yale said.

Units completed from the 16th on will be stored at Convair in Bldg. 2 at Lindbergh Field, near the DC-9 production area, and delivered to Douglas' Santa Monica plant on a deferred delivery basis.

Testing Devices Developed To Gauge Human Efficiency

Model 1 RATER (Response Analysis Tester) and LOGIT (Logical Inference Tester) units, developed by Dr. Robert S. French, PhD., chief of the crew performance group of Convair's life sciences Dept. 592-0, have been purchased by military medical centers in Florida, Connecticut and Texas.

Both units are devices for assessing human performance efficiency and are being used by the U. S. Naval Aerospace Medical Institute at Pensacola, Fla., the U. S. Naval Submarine Medical Center at New London, Conn., and the U. S. Air Force Aerospace Medical Division at Brooks AFB, Texas.

RATER creates a simple choice reaction-time situation in which the test subject presses a response key as each of four symbols appear at random in a display window.

Performance, scored by speed and accuracy, is recorded on counters or chart paper.

LOGIT measures higher mental processes such as reasoning, memory and decision making. Its task is for the subject to learn with a minimum of button presses the random order in which 20 buttons should be pressed for a specific solution.

A set of 5,000 LOGIT problems, classified in terms of number of moves required for solution, is included with the equipment. A new problem can be programmed quickly by means of a switch panel.

RATER and LOGIT units each consist of two small consoles with interconnecting cable, weigh about 20 lbs. and have been fabricated by Convair division's electronics manufacturing Dept. 780.

RATER and LOGIT have been used by Dr. Bernard Newsom, PhD, of Convair's life sciences department to test individuals following prolonged occupancy in the division's Manned Revolving Space Simulator.

Model 2 RATER and LOGIT units, improved through use of integrated circuits, are now under development by Convair and Dr. French said a third generation series incorporating microminiature circuits may be feasible.

Two Reservists Visit Viet Nam

Two Convair division employes have made an 18,000-mile flying trip to Viet Nam, the Philippines and Japan while on two weeks active duty training with Naval Air Reserve Squadron VR772.

They are James C. Watt, a special courses instructor in educational services Dept. 130-3, and Norman K. Polakowski, a design draftsman in launch vehicle engineering flight control Dept. 967-3.

The Reserve squadron transported 45,000 lbs. of cargo from Pt. Mugu, Calif., to Marines at Chu Lai and Da Nang, Viet Nam, in three C-118B (DC-6B) aircraft.

Watt, a radioman in the squadron, was responsible for communications on one of the planes. Polakowski was assigned to another as cargo master and flight attendant.

"Chu Lai was under mortar attack the day before we arrived," Watt said.

"While we were refueling at Da Nang, a C-130 was shot up by ground fire on the same approach we had made 15 minutes before."

Majority Votes Against IATSE

Convair division salaried photographic specialists at Lindbergh Field and Kearny Mesa voted 23 to 4 against representation by the International Alliance of Theatrical and Stage Employes (IATSE) in an election conducted Jan. 13 by the National Labor Relations Board.

Employes voting are employed in still photo, microfilm and motion pictures and television sections at the two plants.

The IATSE formerly represented salaried photographers at Lindbergh Field under a contract that expired Jan. 14 and that was negotiated prior to the merger of the Convair and former Astronautics divisions.

Hourly photographers are still represented by the IATSE under a five-year contract signed in 1965.

Insurance Deducts On Dependents Given

Convair employes itemizing medical deductions on their 1966 income tax returns may deduct premiums for dependents' insurance for the period during which it was paid.

Premium was $2.89 weekly for the 39 weeks from Jan. 1 through Oct. 2 and $2.68 weekly for the 13 weeks from Oct. 3 through Dec. 31. Total for the entire year is $147.55.

Total amount taken from the employe's salary for California Disability Insurance also can be deducted under the "taxes" section of the federal income tax form. This is one per cent of the first $7,400 in earnings or a maximum of $74.

Wives, Husbands Teams Win Bridge

Winners in January play of the CRA Bridge Club were Ceil McCullough and Margaret Grindstaff, North-South, and their husbands, Howard McCullough and Burton Grindstaff, East-West, on Jan. 6.

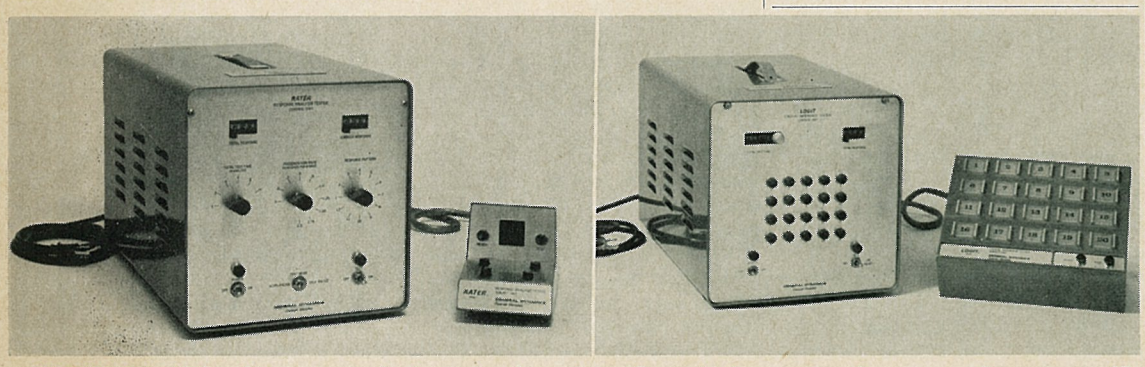
The following Friday (Jan. 13) North-South honors went to Mrs. Grindstaff and Bob Rustad, while McCullough and John Christie took East-West.

Ext. 1555 Is Number On Emergency Calls

One phone number — ext. 1555 — is now being used for reporting emergencies at Kearny Mesa, Lindbergh Field and Air Force Plant 19. Gummed labels with the number, distributed this month with the new division phone directories, are to be attached to telephones.

DISCUSSION SET ON TREES, SHRUBS

Convair gardeners are invited to a discussion on flowering trees, shrubs, and vines tomorrow evening (Jan. 26) in the Recital Hall, Balboa Park, at 7:30 p.m. Dr. Samuel Ayres of the San Diego Floral Botanical Foundation will talk. Admission is free.



TESTING UNITS—Shown are devices developed at Convair for testing human performance efficiency. They have been used to test individuals after spending periods of time in division's Manned Revolving Space Simulator.

CRA Calendar

(Following is a complete list of CRA activities. It is suggested that GD/NEWS readers clip it for future reference. For information on activities call CRA Clubhouse, ext. 1111 KM.)

★ ★ ★

ADVENTURERS — Meetings third Wednesdays, 7:30 p.m., CRA Clubhouse, Kearny Mesa. Monthly camping and field trips. Commissioner Dick Bowen, KM ext. 3233.

ARCHERY — Group in process of reorganization. Commissioner Al Stone, LF ext. 586.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park. Commissioner Al Van Norman, KM ext. 1864.

BALLROOM DANCING — Instruction courses held at CRA Clubhouse Monday evenings. Commissioner Royce Riggan, LF ext. 1018.

BASEBALL — Teams entered in IRC and city leagues, Pete Beyrer, KM ext. 1111.

BASKETBALL — Shop league play now in progress. Commissioner Gil Crosthwaite, LF ext. 1338.

BICYCLE CLUB — Monthly 25 or 50-mile rides. Business sessions conducted during rides. For information call Joe Olander, KM ext. 3045.

BOWLING — Leagues bowl year-round at major bowling alleys. Commissioners: Forest Erwin, KM ext. 2884; Mike Brooks, home phone 469-8793; Jim Hayman, home phone, 469-1262.

BRIDGE — Play each Friday, 7:30 p.m., CRA Clubhouse. Master point nights monthly. Commissioner Bob Rustad, KM ext. 3689.

CAMERA CLUB — Meetings third Sundays, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS — Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS — Meetings third Wednesdays, 7:30 p.m., Convair cafeteria, Lindbergh Field. Commissioner Vince Bacon, KM ext. 2891.

FENCING — Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts. Commissioner Mike Hurley, KM ext. 1054.

FISHING CLUB — Meetings third Tuesdays, place to be announced. Potluck, 6:30 p.m., business, 7:30 p.m. Co-commissioners Bob King, KM ext. 1846, and Bob Menzie, LF ext. 552.

FLYING CLUB — Bonair Flyers meet first Tuesdays, 7:30 p.m., CRA Clubhouse. Fly-ins scheduled periodically. Commissioner Glen Hemphill, LF ext. 1484, Electronics.

GARDEN CLUB — Meetings first Wednesdays, 7:30 p.m., Floral Association Bldg., Balboa Park. Commissioners E. L. Henderson, home phone 274-1574; Gene Zimmerman, home phone, 277-3383.

GOLF — CRA tournaments held monthly. Commissioner Ken Wulfemeyer, KM ext. 2657.

GUN CLUB — Club shoots first Sundays, 10 a.m., Gillespie Field Range. Registered trap and skeet shoots scheduled regularly. Commissioner Jack Swank, 298-8331, ext. 301.

HEALTH CLUB — Facilities in CRA Clubhouse open to families, men, women under direction of professional instructors. Call KM ext. 1111.

HI-FI/MUSIC — Meetings second Tuesdays, 7:30 p.m., CRA Clubhouse. Commissioner Archie Ellsworth, KM ext. 1196.

ICE SKATING — Skating sessions for General Dynamics families Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena. Group outings to Big Bear and ice hockey games during season. Commissioner Bud Davies, KM ext. 2701.

JUNIOR SCIENCE — Workshops third Fridays, 7:30 p.m., CRA Clubhouse. Commissioner Keith Sears, KM ext. 2328.

MODEL RAILROAD — Commissioner Dave Fyffe, KM ext. 1256.

PISTOL CLUB — Club shoots second and fourth Sundays, 9:15 a.m., SD Police Pistol Range, Federal Blvd. and Home Ave. Commissioner Joe Williamson, LF ext. 1866/1413.

RADIO CLUB — Meetings first and third Thursdays, 7:30 p.m., CRA Clubhouse headquarters. Commissioner Fred Schulz, KM ext. 1392.

RAILROAD — Miniature railroad operated for GD children at CRA Missile Park. Work sessions Tuesday evenings and Saturday mornings. Commissioners Ed Stevens, KM ext. 1441; Al Kent, KM ext. 3314. Business meetings first Tuesdays, CRA Missile Park Roundhouse.

RIDING CLUB — Regular meetings second Wednesdays, 7:30 p.m., CRA Clubhouse. Monthly horse shows at CRA horse arena. Commissioner Steve Berry, LF ext. 746.

RIFLE CLUB — Senior shoots second and fourth Wednesdays, 7:30 p.m. Junior shoots first Saturdays, 8 a.m., Gillespie Field Range. Commissioner Dick Zeich, LF ext. 1222.

ROCKHOUNDS — Meetings second Wednesdays, 7:30 p.m., CRA Clubhouse. Lapidary workshops at Kearny Mesa Clubhouse and Gillespie Field open on regular schedule. Co-commissioners Fred Baugh, KM ext. 1446; Dan Whorton, LF ext. 1323.

ROLLER SKATING — Free General Dynamics skate nights third Mondays at Skateland, Front and G Sts. Tickets at employe services outlets.

SAILING — Sailing and instruction. Meetings fourth Wednesdays, 7:30 p.m., CRA Clubhouse. Commissioner Jerry Toyen, KM ext. 1685.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB — Meetings first Tuesdays, 8 p.m., Catamaran Hotel, Mission Blvd. Water skiing on Mission Bay during summer season. Snow skiing trips to Mammoth Mt. and Big Bear during winter season. Commissioner Joe Harris, home phone, 284-0278.

SKIN DIVING — Delta Divers meet second Wednesdays, 7:30 p.m., CRA Clubhouse. Dives scheduled regularly during season. Commissioner Cliff Kickbush, KM ext. 1638.

SOFTBALL — Plant league play in slow-pitch and fast-pitch during season. Commissioner Tony Berardini, LF ext. 1046.

SPEECH — Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m., CRA Clubhouse. Dynamic Toastmasters No. 457 meet each Thursday, 5:15 p.m., CRA Clubhouse. Commissioner Ezra Johnson, KM ext. 3388. Serra Mesa Toastmistress Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

SPORTS CAR CLUB — Meetings second Wednesdays, 7:30 p.m., Convair executive dining room, Lindbergh Field. Regular outings scheduled. Commissioner Hank Callihan, LF ext. 1116.

SQUARE DANCING — Instruction held twice a year for beginners. Next course open for registration Feb. 28. Intermediate and advanced dance sessions weekly in CRA Clubhouse. Commissioner Marty Stutz, LF ext. 1330 after 4:30 p.m.

STAMP CLUB — Commissioner Art King, KM ext. 3451.

SWIMMING — Family swim night third Saturdays, 7-9 p.m., Mission Beach Plunge during summer months. Tickets at employe services outlets.

TENNIS — Instruction for beginners and tournaments scheduled throughout year. Co-commissioners Ray Hardy, LF ext. 1460, and Bob Herold, KM ext. 674.

TRAILERS — Travelers meet first Tuesdays, 7:30 p.m., CRA Clubhouse. Regular outings scheduled. Commissioner Virg Marshall, KM ext. 3541. Road Runners meet fourth Thursday, 7:30 p.m., Gillespie Field Clubhouse. Monthly outings. Commissioner Ralph East, LF ext. 1141.

TROPICAL FISH — Meetings and workshops second Mondays, 7:30 p.m., CRA Clubhouse. Pete Beyrer, KM ext. 1111.

VOLLEYBALL — Plant teams entered in IRC leagues.

WIVES — Luncheon meetings third Wednesdays. Potlucks and craft sessions fourth Wednesdays, 10 a.m., CRA Clubhouse.

WOMEN'S GOLF — Monthly tournaments second Saturday of month. For information call Doris Parker, LF ext. 583.

DO-SI-DO—Ski Salefski, Gil Sullivan, Dot Markham, Pat Vaught, Doris Salefski, Mark Markham, and Dick Vaught, go through routine at intermediate square dance session sponsored by CRA Square Dance Club each Thursday evening at CRA Clubhouse.

Novice Square Dance Class Scheduled For Next Month

CRA Square Dance Club plans to offer beginners square dance classes from 8 to 10 p.m. Tuesdays beginning Feb. 28 in CRA Clubhouse at Kearny Mesa.

Roland Hagar, club president, said 20 to 22 weeks of instruction will be given by Dotty and Van Vander Walker, club callers.

"This class will be for people who have never square danced before or those who haven't completed a beginner course," Hagar said. "Those who would like to 'brush up' also will be welcome."

Intermediate square dancers are invited to join the club for dancing from 8 to 10 p.m. each Thursday at the Clubhouse. The third Thursday each month is the club's "party night."

Further information can be obtained by calling Hagar, KM ext. 1954; Marty Stutz, commissioner, LF ext. 1330, or Mrs. Lee Lemen, General Atomic, ext. 556.

Tijuana Ride Scheduled For Convair Bicycling Fans

"Convairiders" will make a four-hour, 50-mile tour from Shelter Island to the international border and back on their "Tijuana ride" Saturday (Jan. 28).

The group will meet at 8 a.m. at the parking lot near Bali Hai and will ride along Harbor Drive, take the Coronado ferry across the bay and pedal along the Silver Strand and the Imperial Beach shoreline en route to the border. The return trip will be through Chula Vista and National City.

Thirty-six persons — a record number — made the 25-mile tour of Mission Bay and Sunset Cliffs on Jan. 14.

"It was very much a family affair," Myke Dickey, ride leader, said. "We had 20 employes and several of the others were children under 12." Bikes used included 10-speed, 3-speed and single-speed varieties.

Cy Campbell, awards chairman, displayed one of the professional bike rider jerseys to be awarded members completing 200 miles on club-sponsored rides.

Joe Olander, club chairman, and Campbell have reached the 150-mile mark and C. N. Cearley and Al Brown each have 125.

Olander said the club plans mountain cookout and beach day events during the summer months in addition to other rides. The mountain cookout will be a weekend outing to combine camping and riding in the Laguna Mountains and beach day will be an all-day picnic, riding and swimming event.

Al Oehler to Head Convair Lens Club

Al Oehler heads the Convair Camera Club for the next year following election of officers at the Jan. 15 meeting.

Clark Windsor was chosen vice president; and Al Berger, secretary-treasurer.

Next meeting of the CRA group will be Feb. 19, 7:30 p.m., in the Photo Arts Bldg., Balboa Park.

Underbrush, Plastic Teams Undefeated

Underbrush team remained undefeated during the first half of CRA fast-break basketball league play and Plastics finished the first half unbeaten in the slow-break league. Teams in the two leagues each played five games during the first half.

In fast-break league play early this month, R & E defeated Centaur, 62-35, Flight Control edged Hot Shots, 33-24, and Underbrush outscored Cosmo Bums, 62-33. Winning in later games was Flight Control over Centaur, 43-38, Underbrush over R & E, 45-36, and Hot Shots over Cosmo Bums, 52-49.

Slow-break league games early in the month resulted in Plastics defeating L.F. Jets, 35-26, Bean Counters taking a forfeit from Stromberg-Carlson and Bullet Biters edging Gyros, 27-25. Winning in later games were Stromberg-Carlson over L.F. Jets, 22-17, Plastics over Bullet Biters, 29-12, and Gyros over Bean Counters, 37-30.

CRA Bonair Flyers Pile Up Air Mileage

Pilots in CRA's Bonair Flyers group piled up enough accident-free mileage last year to have taken them to the moon, around it, and nearly 37,000 miles on the return trip home!

Lee Chastain, past president of the club, has toted up the hours in the air of all the club's licensed pilots as 2,829. At a conservative 100 miles an hour, the club's pilots logged 282,900 miles without a single bumped fender.

Total instructor hours flown by members was 346 and passenger hours totaled 935.

Figures were based on activities of the 51 active paid-up members now on the roll. These include four commercial pilots, 33 private pilots, 12 student pilots, and two prospective students.

Pruitt and Foley Tie For Low Net

Winners in the Jan. 7-8 CRA golf tournament at Coronado were:

Flight 1 (0-13 handicap) — Ralph Way (Dept. 400), low gross, 78; Pete Molis (Dept. 987), runner-up, 83; Mark Pruitt (Dept. 957) and Bill Foley (Dept. 400), tied for low net, 74.

Flight 2 (14-18 handicap)—Terry Kell (Dept. 423), low gross, 83; Scotty Rutherford (Dept. 041), runner-up, 87; Bill Matlock (Dept. 195) low net, 70, and M. Aleshire (Dept. 102), runner-up, 71.

Flight 3 (19 and over handicap)—J. Gordon (Air Force), low gross, 91; Bill Bullock (Dept. 113) and Al Van Horn (Dept. 400), tie for runner-up, 96; Paul Hood (Dept. 002), low net, 70, and V. P. Mavrinac (Dept. 460), runner-up, 73.

Flyers Will Visit Aerospace Museum

Bonair Flyers will combine their Feb. 7 business session with a field trip to the Aerospace Museum in Balboa Park, Commissioner Glen Hemphill said. Members will meet at the museum at 7:30 p.m. and hold a short meeting before the tour.

Red Taylor, president and operations officer for the club, is still taking reservations for the fly-in to Death Valley over this weekend, Jan. 28-29. He may be reached by calling ext. 2056, KM.

Fishing Derby Set For Feb. 4

CRA Fishing Club has scheduled its first fishing derby of the year for Feb. 4 at Salton City campgrounds, ½-mile north of Salton City Marina.

The day will end with a fish fry at 5 p.m. Members and friends needing transportation or boats have been asked to call Earl McDaniel, LF ext. 1067, or C. T. Boyle, KM ext. 2728.

First prize in the December fishing contest, a landing net, went to Eddie Ray, for a 29-lb. halibut. Second prize, a canteen, was awarded to James Feeley, 14-yr.-old son of Robert Feeley of Dept. 059-3, for a 2¾-lb., 18-in. rainbow trout.

Runner-up anglers were Helen Black with a 3-lb. 12-oz. cabazone and a 4-lb. 4-oz. bull bass; Harry Black of Dept. 451-0 with a 4-lb. 14-oz. bull bass, and McDaniel with a 4-lb. 8-oz. bull bass.

Fee of $1 per family is due now to be eligible for 1967 monthly contests.

This Is Last Day For Net Tourney Entries

Today (Jan. 25) is last day to enter CRA Tennis Club's annual winter tournament slated for the next three weekends (Jan. 28-29, Feb. 4-5, 11-12) at Morley Field and Mesa College courts.

All Convair employes and members of their immediate families are eligible to compete. No entry fee is assessed.

Players may compete in men's singles—novice, intermediate, and advanced classes; men's doubles; women's singles; and mixed doubles.

Entry forms are to be returned to Co-commissioner Bob Herold, mail zone 144-10 KM.

Hi-Fi Club to See Hockey Game Film

CRA Hi-Fi Club members will see a film of the San Diego Gulls hockey team in action at their next meeting at 7:30 p.m. Feb. 14 in CRA Clubhouse. A member of the Gulls' organization will be present and two members of the club will win tickets to the Feb. 25 game, Gulls vs. Los Angeles.

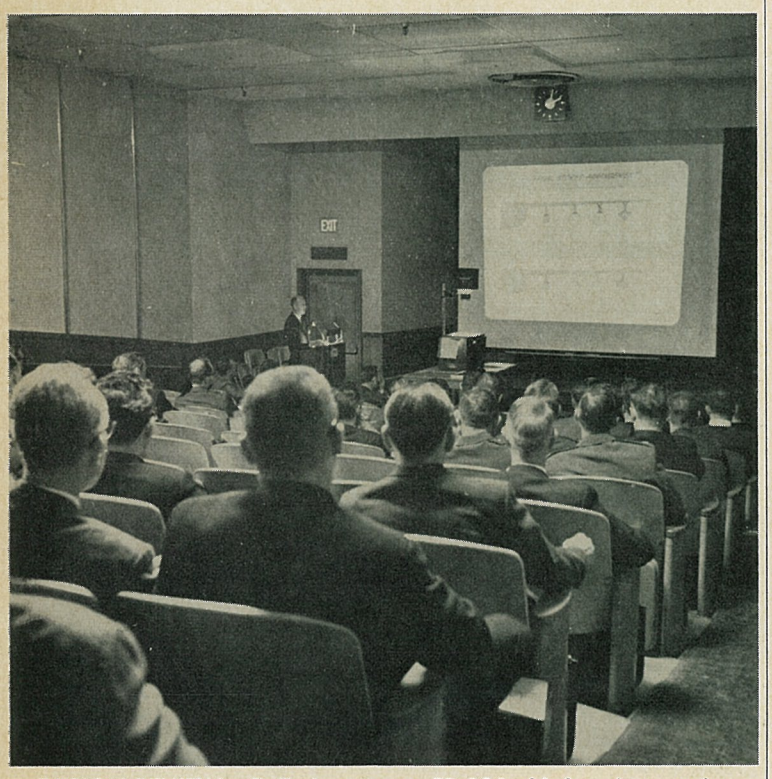
C. L. Cozzens, a design engineer in Convair's Dept. 988-5, has been elected president of the club for 1967. Other officers are J. D. Martin, vice president; A. A. Haigh, secretary; and H. C. Meservy, treasurer.

Executive committee members are W. T. Abbott, H. D. Akers, W. E. Evans, Lazlo Matrai and W. A. Roden.

Design of FB-111 Fuel Tank, Equipment Reviewed by Air Force Board on Coast

Design of the FB-111 600-gal. fuel tank and associated equipment passed an Air Force board with high marks at a two-day engineering design review of the tanks and pylons held by Fort Worth division at Convair's Lindbergh Field plant in San Diego, Calif., Jan. 12-13.

Col. J. B. Robinson, deputy director of engineering for the F-111 System Program Office, Wright-Patterson AFB, and review board chairman, summed up the program, "Good progress has been made against a compressed schedule directed toward the FB-111 weapon system."



DESIGN REVIEW—F. E. Armstrong, FB-111 chief project engineer for Fort Worth division, at podium (far left), presents slides showing design of external fuel tanks for FB-111, SAC strategic bomber version, at Jan. 12-13 design review by Air Force held at Convair plant in San Diego.

Design board participants agreed that submission of Requests for Action (design changes) was minimized by the extensive informal coordination which has been conducted between contractor and the System Program Office since the inception of the FB-111 program. That coordination, carried on in a series of meetings at both General Dynamics plants as well as at the SPO, was confirmed at the review indicating that previous recommendations and requests had, in general, been satisfactorily incorporated.

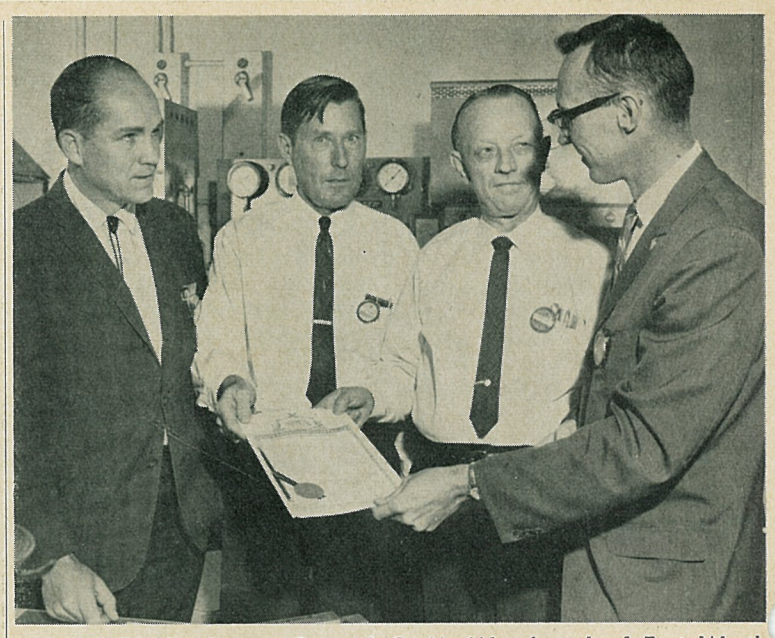
(Convair engineers have been involved in F-111 design under a work assist arrangement between the two divisions and Convair will build the 600-gal. external fuel tank prototypes.)

Following thorough briefings by Fort Worth division personnel, headed by R. J. Patton, FB-111 program director, and F. E. Armstrong, FB-111 chief project engineer, the design review board asked for only six changes, with three to be accomplished as part of current contractual requirements.

First day of the meeting was spent in viewing films of wind tunnel tests conducted to date and blueprints of all key hardware features, and hearing presentations on all phases of the external fuel tank and pylon design.

Members of the review board besides Colonel Robinson, were Lt. Col. J. R. Hall, assistant chairman; Lt. Col. W. C. Robison, AFSC; Lt. Col. J. L. Mulligan, SAC; D. S. Locy, SMAMA; Lt. Col. T. J. Cribbs, TIG.

Serving on the Air Force technical team, engineering test and logistics, which presented its recommendations to the review board were: Maj. R. T. Kozuma, captain, SPO; Lt. Col. D. E. Miller and Lt. Col. L. W. Dawson, both from TAC, Langley AFB, Va.; Lt. Col. R. C. Gordon Jr., TIG; Capt. J. K. Potts, ASLT; T/Sgt. R. E. Crawford, ATC; J. A. Ryan, SENX-LJ; L. L. Reed, SEG; Flight Lt. O. J. Truelove, ASL/RAF; J. Tankursley, AFPRO, Fort Worth division.



INVENTORS—Patent Counsel C. M. Woodward of Fort Worth division presents award to Dynabond inventors John M. Warren, second from left, and Harold P. Owen, Dept. 65-2. At left is Ray Bissell, FW chief airframe equipment laboratories.

Two At Fort Worth Invent High Temperature Adhesive

Dynabond, a high-temperature adhesive invented by two Fort Worth division engineers, is taking the place of nuts and bolts and welded joints in some aircraft construction.

The high-strength adhesive is already being used in high temperature areas of the F-111 fuselage and engine, and General Electric is using it on jet engines.

Inventors John M. Warren and Harold P. Owen, Dept. 65-2 chemists, envision many future uses for Dynabond.

"Adhesively bonded structures are frequently replacing riveted, bolted and welded joints in construction of aircraft, missiles and other aerospace vehicles," said Owen.

Adhesively bonded structure is lighter, stronger, highly resistant to fatigue strain and more aerodynamically streamlined than the conventional type joints, he explained.

Owen said metals bonded with Dynabond have a higher strength-to-weight ratio than structures joined by bolt and rivets.

"Bolt and rivets provide greater shear strength at the point of attachment," Owen said, "but adhesives provide a stronger total bond because the entire surface is bonded."

Previously, most conventional metal adhesives had a serious limitation: decomposition at high temperatures.

Dynabond has "excellent qualities" from below room temperature to temperatures of above 600 degrees F. for extended periods of time, and well above 600 degrees F. for short periods.

The adhesive has a relatively short curing cycle and effects a bond which does not give off volatiles or corrosive by-products. It is impervious to aircraft fuel, hydraulic fluid and other liquids.

Owen and Warren evolved Dynabond over a three-year period, starting in 1958.

The "pure research" paid off a few years later, when adhesives capable of withstanding temperatures up to 500 degrees F. were needed for the F-111. Thanks to the Corporately-sponsored independent research by Owen and Warren, Dynabond was available.

The adhesive is licensed to B. F. Goodrich Industrial Products Co. and to Narmco Materials Division of the Whittaker Corp.

Ardmore Facility Is Awarded $3,666,000 Contract For Tents

Stromberg-Carlson's Ardmore, Okla., facility has been awarded a $3,666,000 contract by the Department of Defense to produce 15,600 small size, general purpose tents.

It is believed to be the largest defense contract ever awarded in the area.

In addition, the Government will furnish approximately $2 million worth of material to S-C, bringing total cost of the tents to nearly $6 million.

The tent contract was expected to result in adding approximately 175 new employes to the present population of 160. A training school started this month for about 25 persons and another 40 students were expected to be enrolled in February. The school will graduate experienced sewing machine operators.

The tent is an all-fabric item with no metal work. First shipment is scheduled for late April with production continuing for about 18 months.

The tent contract is with Personnel Supply Center of the Defense Supply Agency, Philadelphia, Pa., which buys for all branches of the armed services.

Data Products Awarded Orders To Develop Airborne Systems

Stromberg-Carlson's Data Products division has received two contracts for development of airborne computer display systems to be used in anti-submarine warfare and in aerial early warning and control systems.

Both contracts were awarded by the Naval Air Development Center, Johnsville, Pa.

Under the first contracts S-C Data Products will build two tactical display consoles for laboratory simulation and for possible airborne applications. Each console will display computer-processed information on a 12-inch cathode ray tube.

CHARACTRON® Shaped Beam Tubes are used in each console. The tube will display alphanumerics, raw radar, scan converted radar, and low light level TV information. Information will be used by operators for detecting submarines and plotting attack strategies.

The second contract calls for two similar consoles for use in a Navy in-house laboratory program. This program is to develop data processing equipment for future carrier-based early warning and control systems.

The new consoles are an outgrowth of Stromberg-Carlson's earlier equipment developed for A-NEW, the Navy's new airborne anti-submarine warfare system. These displays incorporate microminiaturization of circuitry and smaller display tubes for possible use on carrier-based planes.

Bowers on Board Of Space Pioneers

Jack L. Bowers, Convair division general manager, has accepted an invitation to serve as a member of the board of advisers of the recently formed Missile Space and Range Pioneers Association.

Among other board members are Gen. Bernard Schriever, USAF, ret.; H. K. Debus, director of Kennedy Space Center; Dr. Werner von Braun, director of Marshall Space Flight Center; Ruben F. Mettler, president of TRW Systems; Richard E. Horner, general manager of Norair division of Northrop Corp., Rep. Charles M. Teague, R-Calif.

EASTERN RANGE STEAKS—Convair employes at Eastern Test Range last month marked close of highly successful launch year with steak frys at Complex 12, 13 and 36. Pictured here is gathering at Complex 36, attended by almost 200.

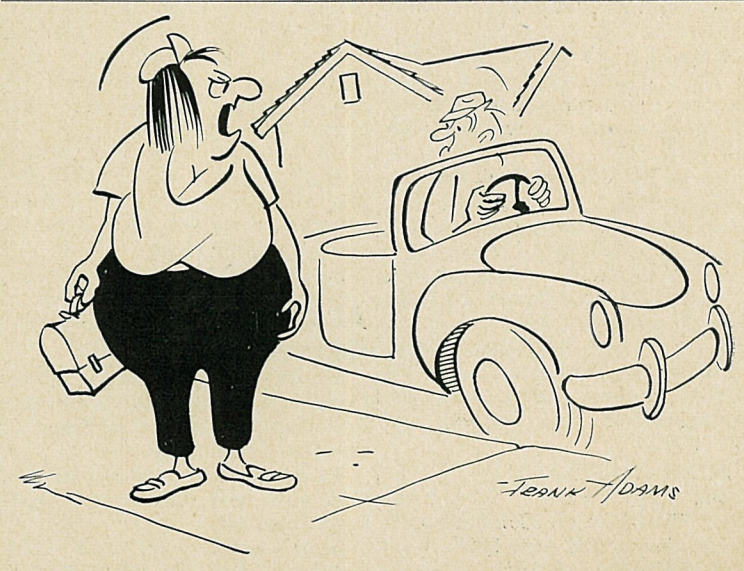
S-C Will Engineer Telephone System

Stromberg-Carlson will engineer, furnish and install a new telephone system to serve the Bahama Islands.

The contract, in excess of $1.5 million, was announced by Alan C. Wright, general manager of the Bahama Telecommunications Corp. and Dause L. Bibby, S-C president.

The contract is for a 9,000-line local central telephone office and a toll tandem switching center. It is the initial major phase of a long-range multi-million dollar expansion program.

A significant factor in the decision to award the contract to Stromberg-Carlson over other active competition was delivery, and the suitability of the Stromberg-Carlson XY switching technique.



"I've paid my car pool fees faithfully for two years . . . I wish you'd stop referring to me as 'the pay load.'"

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 3 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, February 8, 1967

ADMIRAL VISITS—VAdm. Charles B. Martell, director of anti-submarine warfare programs for the Office of Chief of Naval Operations in Washington, confers during recent visit to Convair division with, from left, E. R. Peterson, Convair vice president-research and engineering; E. H. Heinemann, General Dynamics vice president-engineering and program development; and Jack L. Bowers, Convair general manager.

VAdm. Martell Briefed on VSX

VAdm. Charles B. Martell, director of anti-submarine warfare programs for the Office of the Chief of Naval Operations, and members of his staff recently visited Convair division's Kearny Mesa plant for a briefing on progress in development of the division's proposed anti-submarine warfare VSX aircraft.

The admiral and officers with him conferred with Jack L. Bowers, Convair division general manager; Edward H. Heinemann, General Dynamics vice president-engineering and program development; E. R. Peterson, Convair vice president-research and

(Continued on Page 2)

New Equipment Added As LF Plant Renovated

Activity at the Lindbergh Field plant of Convair division is on the upswing in preparation for the huge C-5 empennage program, with nearly $6 million in Corporate funds earmarked for capital facilities and equipment.

Work has been under way since last fall on renovation and remodeling of several buildings which are being converted for C-5 production work. Processing building (Bldg. 75) is now complete as a sulphuric acid anodize facility—a new capability at the Lindbergh Field plant. The building has been extended to make room for five new tanks and two existing tanks have been lengthened, to add the aluminum anodize capability. Previously, the processing facility was set up for alodining only.

Greatest change in the scenery is the remodeled Bldg. 78, former transportation headquarters, which will house the new shot peen facility. The building was raised five feet to give 20 feet clearance at the eaves to allow room for the shot peen gantry. Equipment installation will start this month.

The shot peen facility, the only one to date in San Diego, provides the capability for stress relieving and contour forming of machined aluminum parts.

Bldgs. 10 and 13 have been combined into one large building for polishing, blending, dye penetrant, and inspection of skin planks. Most of the construction work has been completed and the interior painted ready for installation of equipment.

First floor of Bldg. 5 (former experimental department) is being rearranged to make room for numerically-controlled mills which will be installed within the next year to give Convair a well-equipped Numerical Control Center.

The first large machine, a 5-axis mill funded by the Air Force, is now going into place in the center of the high bay area. First of three numerically-controlled 3-spindle, 3-axis mills with 23x40x6-ft. beds will arrive in-plant this September. The remaining two will be installed in January and March of 1968. These will be joined by two smaller N/C mills, both single spindle, one a 3-axis and the other a 4-axis mill. Two overarm conventional mills and a vertical conventional mill also

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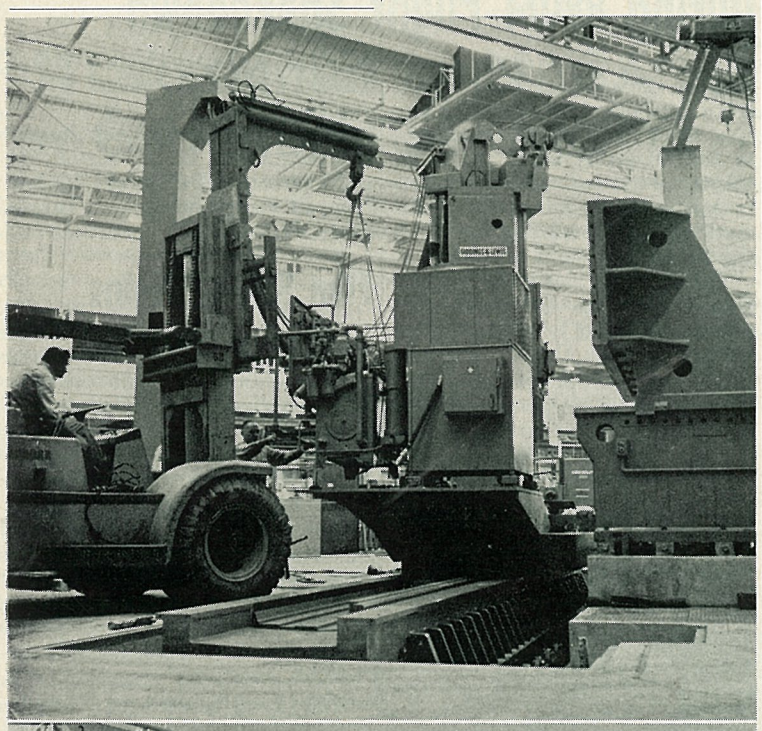

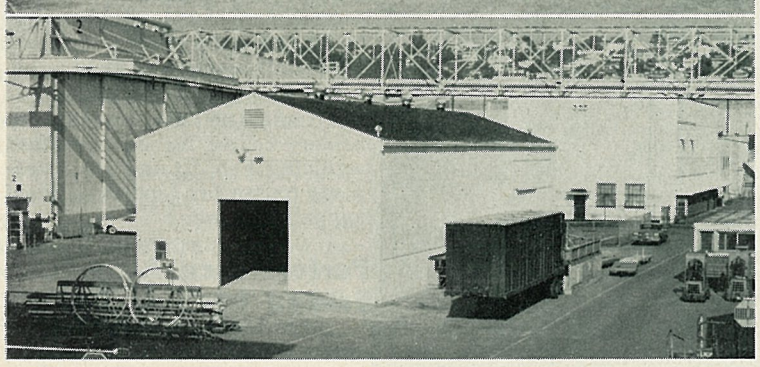

BUILDING BOOM—Convair's Lindbergh Field plant is taking on new appearance with renovation of buildings and installation of new equipment for C-5 empennage program. In upper photo, large numerically-controlled milling machine is installed in what will be Numerical Control Center in Bldg. 5. Below shows Bldg. 78 (old transportation building) which was raised five feet and remodeled as shot peen facility.

Disneyland Leased For Family Party

Convair Management Club has leased Disneyland for five hours April 8 for the third annual General Dynamics Family Party.

Tickets at $3.75 each will go on sale next week at employe services outlets, CRA Clubhouse and other locations.

Donald E. Evanson, planning committee chairman, said the single admission charge will cover all attractions and parking. Bus transportation from San Diego also will be arranged at additional cost.

GD's Earnings Continue Rise

Earnings of General Dynamics Corporation increased for the fifth consecutive year, Roger Lewis, president, announced last month.

Consolidated net income for the year ended Dec. 31, 1966, was $58,407,000, equivalent to $5.59 per common share after provision for preference dividends. That compares with $49,269,000, equivalent to $4.48 per common share after preference dividends in the preceding year. 1966 net earnings, Lewis noted, include a non-recurring long-term capital gain of $4,452,000 on the disposition of securities.

Consolidated net sales for the year ended Dec. 31, 1966, were $1,796,991,000, compared with $1,472,785,000 in the preceding year.

AIRCRAFT RANK HIGH ON LIST

Deliveries to services and agencies of the United States and Canadian Governments represented 78 per cent of total sales in 1966. This work falls into four prime categories, representing the following proportions of total sales: aircraft, 37 per cent; marine (including both surface and submarine ships), 20 per cent; tactical (including missiles, electronic and support equipment), 10 per cent; and space vehicles and support activities, 11 per cent.

Sales to industrial and commercial customers—for electronic and communications equipment, aircraft, coal and lime, nuclear reactors and research, compressed gases, building materials and machinery—accounted for the remaining 22 per cent.

CAPITAL SPENDING SHOWS INCREASE

Backlog of funded orders at the end of 1966 was $1,651,000,000. An additional $1,741,000,000 in orders were under negotiation.

Capital expenditures for property, plant and equipment during the year were approximately $62,100,000, an increase of 28 per cent over the prior year.

Highlights of the year included:

Redemption of all preference stock remaining outstanding from the merger with Material Service Corp. in 1959.

Acquisition, through a tender offer, of all outstanding stock of United Electric Coal Companies, and the establishment of that operation as a 100 per cent-owned subsidiary of General Dynamics.

Acquisition of Dynatronics, Inc., a leading producer of space telemetry equipment, and incorporation of its activities within the Electronics division.

Delivery of all development F-111 aircraft to the military services for test and evaluation (exclusive of one being developed into a strategic bomber version and one into a reconnaissance version) and the beginning of production of operational aircraft for delivery starting early in 1967.

SURFACE SHIP ORDERS WON

Contract awards for four new nuclear submarines, six new large surface ships and two new research submersibles for the U. S. Navy.

A record of 22 consecutive successful Atlas launches and the success of the Centaur hydrogen-fueled space vehicle, both in placing the Surveyor on its path to the moon and in proving its ability to re-ignite its high energy fuel in space.

The beginning of delivery in production quantities of Redeye shoulder-fired surface-to-air missiles, and of two varieties of jeep-mounted single-sideband tactical radio systems.

Sustained Performance Awards Earned by Two Convair Depts.

The first Sustained Performance Awards given in the Convair Craftsmanship program have been presented to test equipment manufacturing Dept. 780-3 and telemetry operations Dept. 780-4 at Kearny Mesa.

Both departments had recorded significant continuous quality improvement during the past two years but neither had qualified for the previous "Craftsmen of the Month" honors.

Dept. 780-3 reduced defects per 1,000 manhours from a high of 29 in February, 1964, to less than six during several months in 1965 and 1966. Dept. 780-4 dropped its number of defects from a high of more than 60 per 1,000 manhours before 1965 to less than 10 during many months the latter part of 1965 and in 1966.

Jack L. Bowers, Convair division general manager, and Elwood D. Bryant, vice president-operations, commended the departments for their "consistent improvement" at the combined awards presentation ceremony in Bldg. 33 at Kearny Mesa.

"Continued improvement must always be our objective," Bowers said as he urged employes in the two departments to strive for even further improvement in the quality of their work.

The division and each of its departments have 1967 goals of 20 per cent improvement over last year's quality performance levels.

Bowers presented the two special Sustained Performance Award

(Continued on Page 2)

PERFORMANCE HONORS—Sustained Performance Awards for continued defect reduction over a long period of time have been awarded to Convair's Depts. 780-3 and 780-4. Participating in ceremony, from left, are Jack L. Bowers, J. M. Farrar, W. U. Gatterman, E. D. Bryant, and F. B. Kemper.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Feb. 1 and Feb. 15.

Thirty-year: Dept. 250, V. Sharp; Dept. 515, H. R. Kennedy.

Twenty-five-year: Dept. 005, J. J. Zyirek; Dept. 027, J. O. Sandage; Dept. 031, F. O. Peterson; Dept. 041, R. B. Robinson; Dept. 049, L. C. Foust; Dept. 059, W. M. Becker, Frances D. McKay; Dept. 149, G. J. McMillan; Dept. 193, J A. Sanderson; Dept. 250, W. McPhatter; Dept. 543, V. E. Boyer; Dept. 832, R. J. Gregorich; Dept. 987, R. A. Deutschman.

Twenty-year: Dept. 001, C. R. Thompson; Dept. 102, R. J. Lutz; Dept. 145, R. J. Frindt; Dept. 401, R. E. Clark Jr.; Dept. 420, J. W. Marshall; Dept. 512, L. B. Linn; Dept. 732, W. A. Brodfuehrer; Dept. 830, F. J. Parker; Dept. 835, J. J. Lauber Jr.; Dept. 964, Doraine B. Offerman; Dept. 973, R. E. Lopez; Dept. 988, C. B. Ohman.

Fifteen-year: Dept. 024, E. L. Green; Dept. 101, Esther H. Nilsen; Dept. 130, C. G. Parker; Dept. 144, C. M. Patterson; Dept. 191, J. H. Hinton, G. D. Young; Dept. 250, B. L. Forrester, J. Y. Martin, J. J. Sanchez, W. L. Timm; Dept. 401, J. Pavlas; Dept. 454, M. B. Watling; Dept. 518, D. B. Kelley; Dept. 578, W. M. Thomas Jr.; Dept. 581, W. A. Reinman; Dept. 591, C. C. Dragila; Dept. 732, K. W. Arms; Dept. 733, Frances S. Zbink; Dept. 780, J. Y. Bessler, J. W. Espinoza; Dept. 832, Grace T. Cline, Ethel H. White, D. W. Williams; Dept. 833, E. Garcia; Dept. 957, I. H. Baughman; Dept. 958, C. R. Geiberger; Dept. 963, L. M. Kelly; Dept. 988, H. W. Novak.

Ten-year: Dept. 031, B. B. Peck; Dept. 058, R. L. Cormany; Dept. 059, A. J. Simington; Dept. 100, R. T. Blair Jr.; Dept. 113, J. G. Dumas; Dept. 130, E. E. Sanders; Dept. 143, Ethel L. Batson; Dept. 144, A. E. Webb; Dept. 191, W. D. Jones; Dept. 300, Donna L. Shuffler; Dept. 401, Alma Coppa, H. R. Hassell, C. V. Martinez; Dept. 410, W. A. Carlson; Dept. 507, R. L. Black; Dept. 514, R. J. Schulte; Dept. 518, Zeta L. Weber; Dept. 533, G. P. Stephens; Dept. 542, B. Weinbaum; Dept. 551, J. Caringi; Dept. 562, P. M. Hannay; Dept. 566, L. L. Flood; Dept. 578, T. L. Stalcup; Dept. 579, R. H. Holland; Dept. 589, A. J. Phillips.

Dept. 715, D. Anderson; Dept. 756, K. W. Doll, W. Krumroy, H. R. Teel Jr.; Dept. 780, J. H. Beals, L. E. Cox, Marjorie A. Crockett, H. A. Morgan; Dept. 810, R. J. Campbell; Dept. 832, R. A. Stahl; Dept. 833, E. M. Arnold, R. F. Dahlheim; Dept. 834, Bertha C. O'Donnell; Dept. 835, C. J. Bordelon; Dept. 950, R. C. Korte; Dept. 954, W. Ciofal, Nancy K. Cowser, R. A. Dilworth; Dept. 960, Hildegarde E. Crosser; Dept. 962, R. T. Fox Jr.; Dept. 963, G. W. Moses; Dept. 964, K. Eulette; Dept. 965, W. C. Altstadt; Dept. 973, J. R. Rose, Mae R. Schraud; Dept. 978, A. B. McLemore; Dept. 979, R. C. Gould, R. L. Schneider, P. K. Suganuma; Dept. 985, H. A. Kamman, J. Oltion.

Awards

Employe Suggestion awards approved for the week ending Jan. 20.

Dept. 019, J. R. Bruce; Dept. 143, J. S. Adams; Dept. 144, G. T. Lizon; Dept. 149, L. A. Liggett; Dept. 250, M. M. Blanck, A. R. Dyer; Dept. 401, C. E. Cardo; Dept. 451, G. L. Ford; Dept. 454, R. J. Moe; Dept. 460, J. L. Jacobi; Dept. 518, V. R. Hillman; Dept. 733, R. E. Reeves; Dept. 756, D. E. Tibbs; Dept. 759, J. W. Hudson; Dept. 841, G. Lewis; Dept. 957, F. L. Estevane, J. A. Madden (two awards); Dept. 974, E. L. Carnes, L. W. Howerton; Dept. 985, J. G. Beaton.

Employe Suggestion awards approved for the week ending Jan. 27.

Dept. 002, H. B. Bender; Dept. 015, A. J. DeCasas, L. W. Tracy; Dept. 027, W. Hoover, J. Meller; Dept. 041, E. M. Gatlin, R. E. Pendarvis; Dept. 059, L. L. Young; Dept. 141, E. B. Grainger; Dept. 144, W. H. Behrens, J. H. Brewer; Dept. 518, G. C. Gonzalez; Dept. 578, K. W. Swant; Dept. 717, O. L. Riddle; Dept. 840, S. P. Tessin (two awards); Dept. 841, R. C. Dorame; Dept. 957, A. A. Ames; Dept. 987, B. L. Ennis, H. I. Greenwood, W. L. McDougal, C. W. Neal.

Rider-Driver

CONVAIR

RIDE WANTED — From 21st and Highway 94 to Lindbergh Field. 7:30-4:00 shift. Call Hazel Schwichtenberg, ext. 573 LF or home 232-2583.

RIDE WANTED—From Lomita Village to Lindbergh Field. 7:30-4:00 shift. Call Mary Ellis, ext. 546 LF.

RIDE WANTED — From Washington and Albatross Sts. to Lindbergh Field plant, 7 a.m. to 3:30 p.m. Call D. H. Garner phone 298-7661 after 6:30 p.m.

RIDE WANTED—From E. Mountain View and Adams Ave. to Lindbergh Field plant 7:30 a.m. Call Nora March, ext. 573 LF.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Lindbergh Field, ext. 491, Bldg. 14 auditorium, Tuesday, Feb. 21, 8 a.m., and Wednesday, March 1, 4:30 p.m. Kearny Mesa, ext. 1931, Bldg. 17, Room 7. Monday, Feb. 20, 8 a.m.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931, Kearny Mesa.

Deaths

CONVAIR

SCHUELER—H. A., Dept. 130-1. Died Jan. 14 in Ensenada, Mexico.

Retirements

CONVAIR

BROWN—Thomas S., Dept. 141-3. Seniority date June 8, 1954, retired Jan. 29.

BROWN—William E., Dept. 142-1. Seniority date Oct. 23, 1950, retired Jan. 31.

DIBBLEE — Walter A. Jr., Dept. 143-2. Seniority date Aug. 14, 1961, retired Jan. 22.

NEY—Alfred M., Dept. 528-1. Seniority date Feb. 7, 1950, retired Jan. 31.

VALADE—Emerie L., Dept. 832-3. Seniority date May 9, 1956, retired Jan. 27.

WALSH—Howard T., Dept. 780-2. Seniority date Jan. 21, 1947, retired Jan. 31.

WEBSTER—Frank S., Dept. 250-1. Seniority date May 24, 1934, retired Jan. 31.

WOOD—William J., Dept. 566-1. Seniority date Jan. 14, 1942, retired Jan. 31.

Personals

CONVAIR

We wish to express thanks to all of our dear friends for the lovely cards and flowers received upon the death of our father and father-in-law.

Mr. and Mrs. Genaro Velasquez
Dept. 988-6 and 988-7

* * *

I wish to express our appreciation to our Convair friends and the Con-Trib-Club for their sympathy and help following our recent automobile accident.

S. S. Dobos, Dept. 780-2

* * *

My father, Scott Waller (Convair retiree) and I wish to thank our many Convair friends for their expressions of sympathy and the flowers received at the death of our wife and mother, Eva Waller.

Johnnie Waller, Dept. 149-1

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

WELSH TRANSFERS TO CORP. STAFF

C. E. Welsh, Convair chief of revenue management, has joined the staff of R. R. Brewton, Corporate director of financial policy —defense products, as staff assistant effective Jan. 23.

He succeeds J. Dent Eiland who has accepted the position of assistant controller at Pomona division.

C. E. Welsh

Welsh joined the Company June 25, 1956, as Corporate executive accountant, reporting to Eiland, at that time Corporate director of general accounting. Early in 1961 he moved to the former Astronautics division to head the revenue management function, holding the same post until the time of his current reassignment.

Primary responsibilities of revenue management function is settlement of division overhead and cost disallowances with government auditors and contracting officers, direction of contract termination activities as well as billing and financial forecasting. The revenue management function at Convair now reports to J. J. Jodka, chief of general accounting.

Welsh came to the Corporation from the Air Force Auditor General's office in which he served for over 14 years. He held the position of assistant chief of the contracts audit division in Headquarters Western District at Los Angeles.

New Equipment Added As LF Plant Renovated

(Continued from Page 1)

will be installed this spring. Another vertical mill with tracer control is being funded by the Air Force.

To make room for the Numerical Control Center, spares has been relocated to the mezzanine in Bldg. 1 and prototype manufacture will be moved into Bldg. 4.

New equipment to go into the Bldg. 5 machine shop consists of a N/C 8-spindle drill to be delivered this June; a Marwin router, due later this year; and an Air Force funded Tapeomatic N/C drill, currently being installed.

In Bldg. 1, 22,500 square feet of the north mezzanine is being removed for additional vertical clearance to allow space for the C-5 plank mill area. Two large plank mills, 34x87½-ft. with 12x53-ft. beds, will be installed by this time next year. The first should be at the San Diego plant in August, while the second is due in January, 1968.

The Bldg. 1 machine shop is being rearranged to improve material flow and to provide space for new equipment which includes two Turchan 2D mills, now in use. One surplus spar mill is being modified by adding 15 feet to the bed length and providing a fourth axis on a vertical spindle.

The metalbond lay-up room in Bldg. 3 has been modified to provide environmental control for temperature and humidity to meet all specifications of Convair customers.

Also, several changes have been made within the tooling department. These include the addition of two True Trace mills for profile work and an addition to the material handling equipment in the jig area. The extension of the overhead gantry to an outside area provides better material storage and handling and clears the inside area for more work space.

VAdm. Martell Briefed on VSX Plane Progress

(Continued from Page 1)

engineering; Earl W. Boteler, Convair manager of advanced military aircraft programs; and selected members of the VSX program office staff.

Admiral Martell then met for a 20-minute impromptu discussion with the entire VSX project staff. He emphasized the high reliability and performance requirements for the VSX, urged emphasis on cost effectiveness and pointed out that all aspects of the VSX program must survive critical scrutiny by both the Navy and Department of Defense.

Admiral Martell and the staff members with him examined the Convair VSX crew section mockup, now being used in conjunction with the division's Integrated Manned Systems Simulator (IMSS), and "flew" it for simulated landings aboard "an aircraft carrier at sea."

The IMSS facility combines television and computer technology with sound and other systems for realistic simulations.

Design work on the VSX constitutes one of Convair division's primary programs for this year.

"Active implementation" of the VSX program is scheduled by the Navy for the 1968 fiscal year.

Area Mgt. Clubs Meet Feb. 9

The story of the people-to-people hospital ship, "Project Hope," will be told at the annual meeting of Management Clubs included in the San Diego Area Council of NMA tomorrow night (Feb. 9) in the Community Concourse.

Ralph Bellamy, co-vice chairman of Project Hope's West Coast committee, will introduce Dr. Earl J. Boehme, founder, who will explain the project, established to carry medical aid to the underprivileged peoples of the world. A color film of Project Hope's operation in Peru will be shown.

Host groups are clubs at Convair, Stromberg-Carlson, Electronics, Ryan Aeronautical Co., Whittaker Corp.'s Advanced Structures, and National Steel & Shipbuilding Co.

Social hour begins at 6 p.m., dinner at 7, and program at 8. Price is $5 per person with tickets available from Boosters and departmental representatives at all General Dynamics plants.

Salvage Yard Sale Slated For Mar. 4

Next sales day at the Lindbergh Field salvage yard will be Saturday, March 4, from 8 a.m. until noon. The yard is located adjacent to Gate 5 off the Washington St. extension.

★ Did You Know? ★

(General Dynamics people enjoy numerous advantages and high on the list are those usually referred to as "employe benefits." There are many of them, each designed to complement the others and together form a balanced program for the welfare of the individual. As a reminder, GD/NEWS is carrying a series of brief articles touching upon first one benefit and then another. Some, perhaps, you may not have known existed.)

★ ★ ★

General Dynamics adds 50 per cent to savings employes invest in the General Dynamics Savings and Stock Investment Plan through regular payroll deductions. Each employe, after one year continuous service, may invest a percentage of his base salary. The Plan's prospectus establishes a time schedule under which the Company's contribution becomes vested in the individual and may be withdrawn. Details may be obtained from employe services offices.

(The General Dynamics Savings and Stock Investment Plan is "open" to new members this month, as well as for any changes in investment. Forms are available at employe services. Employes who have recently qualified for membership by reaching one year of continuous service will not be notified individually and must themselves apply for membership if they wish to join.)

PLANE TALK—Ernie Kotnik of Convair (second from right) makes "perfect landing" for benefit of FAA personnel, from left, Fred Musson, Joseph Bailey, William Stephens, Ralph Turner, Richard Cleary, and Floyd Moody, Lear-Siegler representative, during flight shakedown of FAA 880M.

Convair Gives Ground Support During 880M Flight Shakedown

Convair is providing ground support during the flight shakedown of Federal Aviation Agency's 880M now being conducted in San Diego by FAA and Lear-Siegler, Inc., to evaluate the recently-installed integrated automatic pilot and all-weather landing system.

The system, designed by Astronics Division of Lear-Siegler, prime contractor to FAA, was installed at the Convair Service Center. Convair division designed installation provisions for mating system and aircraft.

The system provides dual channels for all axes and modes and includes automatic throttle controls for use during approach and landing. The present installation equips the plane for Category II landings in which the plane is automatically brought in for landing within a specified range of weather conditions. Satisfactory operation of this installation will lead to Category III — plane brought into taxi position.

The current flight test program will extend throughout this week from Lindbergh Field. The jet will then go to the National Aeronautics Flight Evaluation Center at Atlantic City, N.J., for further flight tests.

FAA personnel assigned to the current program are William Stephens and Joseph Bailey, NAFEC flight operations; Richard Cleary, project engineer; Fred Musson, NAFEC Avionics ASD; Ralph Turner, Oklahoma City, flight engineer.

Floyd Moody is Lear-Siegler representative. E. F. Kotnik of the Convair 880/990 project office, is coordinating Convair's share of the task.

CLUB TO PRESENT PHOTO TROPHIES

CRA Camera Club members will meet Sunday (Feb. 19) for their first quarterly contest for the year. Trophies for 1966 also will be presented at the 7:30 p.m. meeting in the Photo Arts Bldg., Balboa Park.

Film Series Begins In Human Relations

Seven films in a "human relations" series will be shown at Kearny Mesa and Lindbergh Field beginning next week in Convair Management Club's group discussion programs.

The series has been rescheduled for 5 p.m. Tuesdays in Bldg. 17, classroom 1, at Kearny Mesa and 4 p.m. Wednesdays in the Bldg. 14 auditorium at Lindbergh Field.

Employes attending each of the "human relations" sessions will receive a certificate of completion. Jack Ables is discussion leader at Kearny Mesa and Robert Ratliff at Lindbergh Field.

The Management Club education committee has scheduled a memory course for Kearny Mesa beginning Feb. 28 and an investments course for Lindbergh Field beginning March 1.

Performance Awards Earned by Two Depts.

(Continued from Page 1)

certificates to Frank B. Kemper, electronics manufacturing factory manager, who in turn presented them to J. M. Farrar and W. U. Gatterman, supervisors.

Similar awards will be presented each six months to division departments that achieve their quality improvement goals.

600 PURCHASE—W. C. Whitesell, president of Thunderbird Airways, Inc. (seated, center), flanked by pilot, Roy Skelly, and William Wunchel, chief of maintenance, admire model of Convair 600 executive craft just purchased by firm. Standing are Gil Clark, Convair assistant commercial sales manager, and P. M. Prophett, director of aircraft sales and service.

Thunderbird Airways Buys First 600 Executive Plane

First Convair 600 executive configuration was purchased late last month by Thunderbird Airways, Inc., headquartered at the Flying W. Ranch airport, Medford, N. J.

The firm, which specializes in the lease of aircraft to businesses, took delivery on the Convair 600 the last day of January. President William C. Whitesell, his family, and crew — Roy Skelly, pilot, and William Wunchel, chief of maintenance left San Diego last weekend for the return cross-country flight. Whitesell is a pilot in his own right, flying for Eastern Airlines before establishing his airport resort and leasing company several years ago.

The 600, converted to Rolls-Royce Dart power at the Convair Service Center, will be leased to Philco-Ford Corp., Philadelphia, Pa. It will be based at the Flying W Ranch and flown and maintained by Whitesell's operation.

"We are confident that this first sale of a Convair 600 executive plane will be the forerunner of many other such sales to corporations throughout the country," Phil M. Prophett, director of aircraft sales and service for Convair, observed.

Thunderbird Airways turned in a Convair-Liner 240 executive plane in trade on the updated 600. This 240 will be refurbished and sold by Convair. Gil Clark, assistant commercial sales manager and long-time Convair employe (he joined in 1938 and was a former test pilot before transferring to customer service), was sales liaison representative for the division.

Whitesell, Skelly, and Wunchel were checked out and rated in the plane by Convair Pilot Loren Pilling before they took delivery. They also had time for a short maintenance indoctrination under John Nowak of field service. Nowak will be based at the Flying W Ranch for the next three months to coordinate maintenance service of the aircraft.

F-111 Assigned to NASA For Continued Studies

F-111A No. 6 is being used by National Aeronautics and Space Administration for research on variable-sweep wing flight characteristics and performance.

The variable-wing fighter was ferried to NASA's Flight Research Center at Edwards AFB last month by Col. R. O. Roberts, SPO, and Major Tom Wheeler, AFPR chief of flight operations. It will be on loan by the Air Force for an indefinite period.

NASA will use the F-111 to obtain basic flight research data for the design and development of future advanced aircraft wings that move fore and aft along the fuselage.

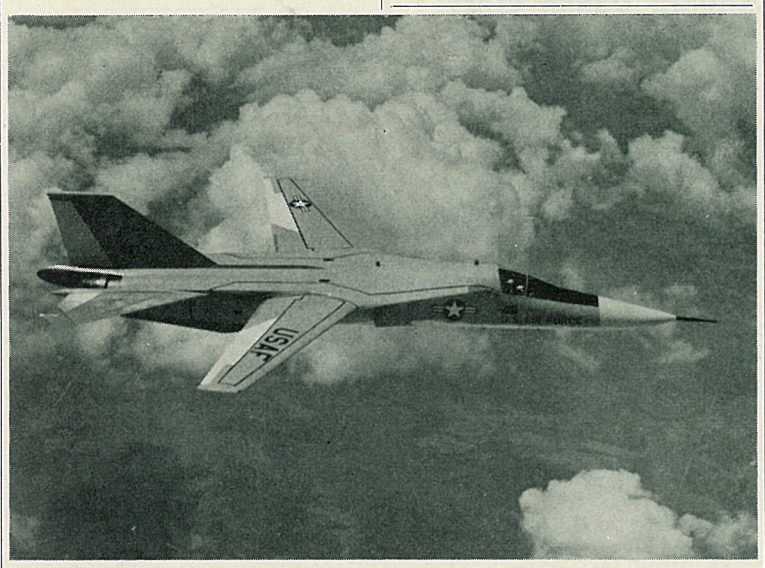
Aircraft of that type now under construction include the Boeing 2707 supersonic transport (SST), Navy advanced fighter-attack (VFAX), and the advanced fighter (FX), advanced attack (AX), and advanced manned strategic aircraft (AMSA), for the Air Force.

Factors to be studied by NASA include stability and control, handling qualities, flight loads and structural dynamics responses, inlet-engine integration, performance prediction, control systems, and operational characteristics.

Data from the flight program will be used to validate theoretical and wind-tunnel studies performed by the NASA Ames, Langley and Lewis Research Centers.

The flight operations are part of NASA's extensive effort in variable-sweep research. Flight research with the operational F-111A will allow the disclosure and investigation of problems that cannot be predicted by other means.

Research on variable-sweep dates back to 1911. In 1960, NASA solved the basic instability problem by sweeping the wings simultaneously around separate pivot points located slightly outward from the wing roots, rather than from a single pivot inside the fuselage. Variation in the sweep serves to alleviate problems of stability, control and drag, and has important effects on the airplane's performance.



CALIFORNIA BOUND—F-111A No. 6 was ferried to NASA's Flight Research Center at Edwards AFB last month. Airplane is being used for research on variable-wing characteristics and performance.

Designs Developed For Hypersonic, Hydrogen-Fueled Cruise Aircraft

Convair division engineers who recently completed an initial feasibility study on hydrogen-fueled, air-breathing hypersonic cruise aircraft for NASA, selected as "most promising" a configuration with "double delta" wings blended into the fuselage.

Four basic possible designs for the hypersonic transport (HST) were considered in the first phase of the nine-month study under a contract administered by NASA's Mission Analysis Division at Moffett Field, Calif.

Aircraft of the type studied, if produced in the 1985-2000 time period as the "next step" beyond the planned supersonic transport (SST), would cruise at three to 12 times the speed of sound.

Two designs—one with "double delta" wings blended into the body and one with delta wings and a circular body—were chosen for more comprehensive analysis during the last five months of the study.

They would cruise at six times the speed of sound, enabling a passenger to fly from Los Angeles to Paris in two hours, compared with 11 hours today and 5½ hours with the SST.

Findings in the Convair study have been presented at NASA's Ames and Langley Research Centers, at Edwards AFB and for the Air Force Research and Technology Division at Dayton, Ohio.

Frank E. Jarlett, program manager for the study for Convair's Dept. 581-5, said cost and feasibility of production of large quantities of liquid hydrogen will be among the most critical problems to be resolved before the hydrogen-fueled HST is feasible.

"Cost of liquid hydrogen will have to be reduced from 30 cents to about three cents a pound to make the HST operating costs comparable to those of the SST," he said. "Electricity and natural gas consumption to produce liquid hydrogen for 200 flights a day under present technology is roughly equivalent to 10 per cent of the daily electrical capacity and natural gas consumption of the United States."

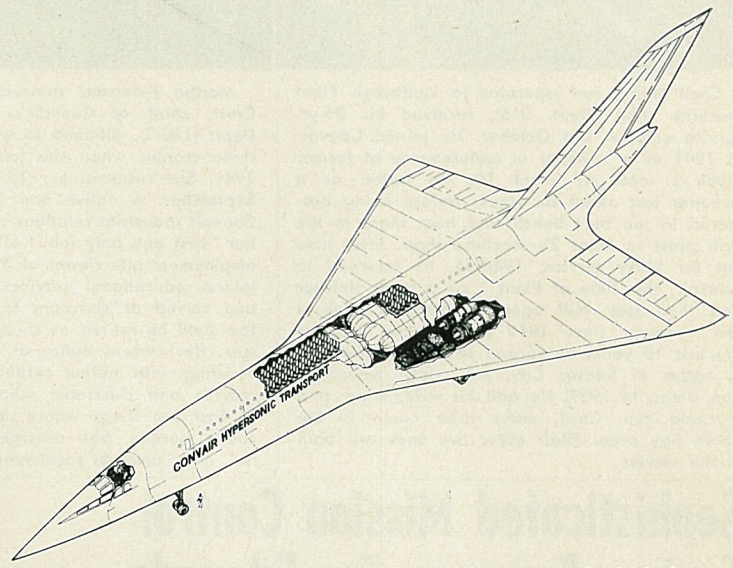
The HST design singled out as "most promising" in the study would carry 200 passengers and operate from conventional airfields. It would be constructed of nickel alloy since skin temperature during flight would reach 1,000 degrees F. It would be about 80 feet high and 320 feet long with a 100-foot wingspan and would weigh more than a half-million pounds.

Jarlett said the study indicated more advanced turbo-ramjet engines and inlet systems than are currently available will be needed for such craft. Temperatures would reach 3,000 degrees F. in the inlet and engine and they would need to be cooled by the hydrogen fuel.

The fuel would be carried in "pillow-type" tanks within the fuselage, probably with a gaseous helium atmosphere around the tanks and fuel system components for safety.

Jarlett said the HST would have a takeoff thrust of 356,000 pounds, compared to 240,000 for the SST and 41,000 for the Convair 880. Noise at takeoff from the airport is expected to be a severe problem. However, because of its higher cruise altitude, sonic boom effects from the HST at supersonic speed would be less than those predicted for the SST.

Convair's study was under the direction of Richard A. Nau, manager of maneuverable re-entry and reusable launch vehicles. In addition to Jarlett, engineers with key roles in the study and areas of responsibility included C. J. Cohan, assistant program director; A. R. Perl, vehicle systems; Alfred Hucknall, structures; C. J. "Don" Tait, configurations; and A. M. Goldman, mission analyses.



DESIGN OF FUTURE—Configuration of hydrogen-fueled, hypersonic transport found "most promising" in Convair initial feasibility study for NASA has "double delta" wings blended into body. "Double" refers to fact that lower part of nose and forward fuselage would be configured in such a way as to provide a narrow delta wing effect, in addition to the conventional wing.

GD PANEL LEADERS—From left, Roland Hagar and Dick Schweitzer of Convair and E. Warren Feddersen, GD Corporate assistant director of plant engineering, discuss new GD Numerical Control Application Panel formed last month.

Divisions Create Panel For Numerical Control Exchange

Four General Dynamics divisions and Canadair Limited banded together last month to form a GD interdivisional Numerical Control Application Panel for more efficient usage of numerical control equipment and capability and better interchange of information between divisions.

E. Warren Feddersen, Corporate assistant director of plant engineering, representing Corporation Headquarters at the Jan. 24-25 organization meeting in San Diego, said, "It is important to General Dynamics that we get the maximum utilization from our investments, men, and machines, and I believe that this can be achieved only through consolidated effort of divisions."

Objectives, as stated in the charter, are to optimize utilization of numerical control equipment, prevent duplication of effort, provide for cooperative research and development of new capabilities; establish common training procedures; formulate common needs of the divisions for unified presentations to ALRP (APT Long Range Program, sponsored by industries to standardize computer language).

The panel is made up of three members from each division. These are chosen from areas most concerned with numerical control techniques — computer, manufacturing, and drafting. One of the delegates from each division will be the ALRP technical representative.

Two meetings will be held each year, the next in April at Chicago in conjunction with the spring ALRP technical meeting hosted by the Research Institute of Illinois Institute of Technology.

Roland I. Hagar of Convair was assigned the task of organizing and chairing the first panel meeting. R. F. Schweitzer, also of Convair, was elected permanent chairman and F. L. Goodykoontz of Pomona division, secretary.

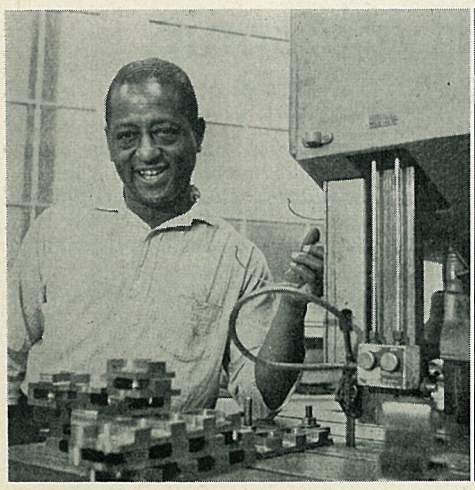
Other delegates were: Canadair Ltd. — Maurice Audet, Gordon Hicks, Hugh Gosnell; Convair — S. C. Padilla, T. H. McManus, J. A. Gesiakowski; Electronics-Rochester — R. L. Bales, K. A. Bridgeman, J. W. Luening; Fort Worth — J. M. Kirksey, J. H. Pullin, H. D. Nobles; Pomona — R. E. Siegrist, L. F. Ahrens.

Stock, Savings Plan Enrollment Open

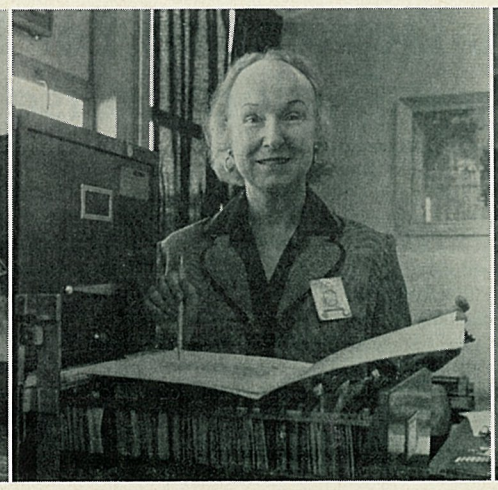
Enrollment in the General Dynamics Savings and Stock Investment Plan will be open throughout February.

Eligible employes who are not members of the Plan, or those who have established eligibility by being with the Company a full year, must sign during February for membership to be effective for the quarter beginning April 1.

Persons wishing to either change their investment option or percentage of savings must also make application during this period. All forms are available in employe services section.

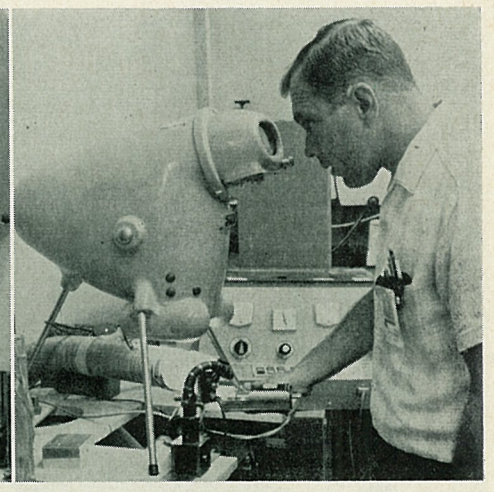


Cecil Hultz, saw operator in Lindbergh Field machine shop (Dept. 015), received his 25-yr. service emblem last October. He joined Convair in 1941 as a sweeper in maintenance at former Plant 2, now AF Plant 19. He lasted as a sweeper just about six weeks before being promoted to the burr bench and from there to the drill press in Plant 2's machine shop. After time out for Navy service, 1944-46, he returned to Convair, this time at Plant 1 as a parts finisher and then spar mill operator. He has been a saw operator since 1949 and worked most of the last 10 years on second shift by preference. A native of Kansas City, Mo., Hultz moved to San Diego in 1939. He and his wife, Erma, and 6-yr.-old son, Cecil, make their home in the South Bay area. Their other two sons are both in the service.



Martha Peterson, steno-secretary for Jack A. Croft, chief of Convair's educational services Dept. (130-3), planned to work for Convair only three months when she joined the company in 1941. She received her 25-year service pin last September. A native San Diegan, her work in Convair industrial relations departments has been her "first and only job." After three years as an employment interviewer at Air Force Plant 19, she joined educational services at Lindbergh Field and served as secretary for Herbert W. Rubottom until he retired as chief of educational services. Her current duties at Kearny Mesa include assisting with tuition refund programs, training records and classroom scheduling. Martha lives in East San Diego where she takes pride in her cactus garden. She considers herself a "desert rat" and "amateur rockhound."

Helen Werdelman, lead nurse in Convair division's central medical (Dept. 130-2), at Kearny Mesa, has been a Convair nurse 14 years and considers nursing one of the most satisfying and rewarding careers a person can follow. "There has never been a day when I have not been happy doing it," she said. Mrs. Werdelman is a graduate of Roosevelt Hospital School of Nursing in New York City and previously worked at Mercy and Paradise Valley general hospitals, the Guest House convalescent hospital in Chula Vista and as a nurse for two physicians in private practice in San Diego. Present duties include arranging work schedules, ordering medical and surgical supplies and assisting with emergency first aid treatment and records keeping for workmen's compensation cases. She lives in Chula Vista and has a daughter, Edith Ann, 18.



Wayne Krumroy, a senior electronics development technician in engineering support (Dept. 756-0), at Kearny Mesa is shown operating an integrated circuits package opening "set-up" in Dept. 146-2's reliability laboratory. A small sand blasting gun-type apparatus shoots a stream of abrasive powder to cut the cover away from the tiny circuit package while Krumroy monitors the process through a stereoscope, which shows a magnified view of the action. An automatic tape drive system moves a small table on which the circuit is mounted for precision cutting. Krumroy served as an aviation electronics technician in the Navy for four years before joining Convair 10 years ago. He lives in the Lake Murray area with his wife, Mildred, and their three children — Gregory, 6; Jeffrey, 4, and Stefanie, 2. He enjoys attending San Diego Chargers games.

Sophisticated Mission Control System Foreseen For Edwards

Convair division, serving as systems integrator, will configure the overall range environment necessary for CENTCON—a centralized mission control and monitor display complex for the Air Force Flight Test Center at Edwards AFB, Calif.

Initial efforts under a recently awarded $841,000 Air Force contract will determine and correlate adequacy of the present aircraft flight test range with projected requirements for the 1970-75 time period, including plans for interim upgrading of capability with existing equipment and facilities.

Engineering, systems design and implementation plans for the finalized CENTCON will be produced in the latter phases of the initial 16-month program. Completion of the final CENTCON installation is projected for the early 1970 time period.

The final system will be designed to provide the Air Force with a highly versatile means for optimum use of facilities in planning, scheduling, coordinating and controlling simultaneous multiple aircraft test missions.

A wide range of control, data processing and communications equipment will be used. A range-status display system will be designed to provide accurate knowledge of the readiness status of all range systems and support services and permit their rapid assignment to a mission controller.

Plans require the final CENTCON to satisfy test range needs for forseeable future vehicles operating at supersonic speeds and using lifting-body techniques.

CENTCON is expected to provide five-minute "turn around" capability for range facilities between missions.

David N. Kahler, who formerly served as program manager for Convair's system integration and development efforts on the now operational Merritt Island Central Telemetry Facility (TEL-4) at ETR, is CENTCON program manager. He reports to W. T. Dorrance, Convair director of special programs. R. J. Reyburn and L. R. McClain are the principal engineers and G. F. Miller will be Convair resident representative at Edwards. L. R. Hixon is responsible for technical data and interface control.

"A team of about 35 Convair engineers and technical consultants will work on CENTCON," Kahler said. "The program provides a real management and technical challenge for us."

Discrete network simulation computer modeling techniques will be used in analysis of current and future range capabilities.

A number of missions will be simulated in detail to identify possible man and equipment problems that could interrupt smooth operation of the system and means by which they may be resolved.

The CENTCON studies also will include consideration of extending existing instrumented air corridors and interconnection of those at Edwards with others such as those at White Sands, N.M., Fort Huachuca, Ariz., and Eglin AFB, Fla. Possibility of such extension becoming part of a "global range," including both Western and Eastern Test Ranges, also may be considered.

Kahler said cost effective analysis will be included in the studies, including estimates of equipment purchase and installation costs and cost savings that can be achieved from use of the final CENTCON system for future aircraft flight test programs.

Design objectives and computer simulations are to be developed by March with the engineering plan to be completed in July. The final CENTCON report and detailed implementation plans are to be submitted in 1968.

W-2 Forms Mailed Ahead of Schedule

Federal W-2 wage and tax statement forms were mailed to all Convair division employes by mid-January, 10 days earlier than in previous years.

John J. Jodka, chief of general accounting, commended James L. Terrien, supervisor, and payroll personnel in Dept. 191-1 for expeditious processing.

Employes with funds from unused sick leave received in their W-2 envelopes, a statement from Security First National Bank reflecting the year-end balance and interest in their account.

Jodka said the sick-leave banking plan statements were included with the W-2 forms solely for mailing cost savings.

Sick leave plan funds, both deposits and interest, are not reportable for tax purposes until they are withdrawn from the bank, he advised.

Ice Hockey Tickets To Be Placed in 'Hat'

Forty tickets (in multiples of two) for Gulls home ice hockey games between Feb. 25 and March 4 will be awarded in a CRA drawing Feb. 23.

Ten tickets will be awarded for each of four games.

Entries may be deposited by employes in boxes at Convair, Stromberg-Carlson, and Electronics-SD employe services offices, the Bldg. 51 engineering mailroom at Lindbergh Field, H. C. Medearis' office at Air Force Plant 19, and CRA Clubhouse.

Employes deposit slips of paper with name, division, plant, department number, shift and plant phone extension.

John Morgan Named Fellow of Institute

John B. Morgan, chief of finance and administration for Convair Service Center, has become the first San Diego area man to be named a "fellow" of the international Budget Executives Institute.

An award plaque from the international organization was presented to Morgan at the January meeting of the San Diego BEI chapter by Gary J. Gonlag, chapter president.

Morgan's selection was based on his record of service as a speaker and seminar leader at international and area conferences, and as an instructor of budget courses at the University of Notre Dame before joining Convair.

Road Runners Plan Desert Expedition

Road Runners will travel to Borrego Desert this coming weekend (Feb. 10-12) for an outing at Butterfield Trailer Park.

Fred Stone of Scripps Institution of Oceanography will head the group as wagonmaster. A potluck dinner and travelogue will be held Saturday evening and planned hikes during the day.

For information call Ralph East, CRA commisssioner, ext. 1141, LF.

Coineer 'Presidents' Displays Arranged

Coineers will base their displays on "Presidents" at the Feb. 15 meeting, 7:30 p.m., in the Convair cafeteria, Lindbergh Field.

Officers for the new club year will be chosen. Door prizes will be two 1967 BU Canadian dollars and two 1967 BU Kennedy half-dollars. To be given in the drawing are an 1890 Carson City BU silver dollar; 7 BU "walking" Liberty half-dollars; and two coin albums.

Square Dance Class Offered to Novices

Twenty to 22 weeks of square dance instruction for beginners will be offered by CRA Square Dance Club from 8 to 10 p.m. Tuesdays beginning Feb. 28 in CRA Clubhouse. Enrollment will close at the March 14 class.

Cost will be 50 cents per person for each lesson. Information can be obtained from Roland Hagar, club president, KM ext. 1954.

FATIGUE COMMITTEE MEETS IN DETROIT

Clarence Smith of Convair is attending an American Society Testing Materials' committee meeting on fatigue in Detroit, Mich., this week (Feb. 6-8). Tomorrow he will address the organizational meeting of the Phoenix, Ariz., section of the Experimental Stress Analysis Society.

Plant Engineers Win Honors In Preventive Maintenance

Two plant engineers at Convair division have been singled out by Factory magazine for special honors for articles describing Convair's preventive maintenance program.

Harry Lund, supervisor of plant engineering work planning, and B. L. Forrester, planned maintenance analyst, received National Maintenance Merit Awards from the magazine at the Jan. 31 awards luncheon at the Drake Hotel in Chicago, Ill. Only 15 awards were given by the magazine this year.

Lund was cited in Category I, Maintenance Cost Improvement, for his entry, "Utilization of Run-Time Meters to Determine Frequency of Preventive Maintenance." Overhaul of equipment at Convair is scheduled on a basis of actual running time as recorded by meters placed on plant equipment. Some 700 pieces at Convair's Lindbergh Field and Kearny Mesa plants are metered, Lund reported.

Forrester received his award in Category II, Electrical Equipment Maintenance, for his contribution on Convair's maintenance of numerical-controlled equipment. The citation read: "Maintenance of numerical-controlled equipment is comparable to conquering a new frontier. Convair division has mastered this frontier . . ."

In addition, W. J. Stanley, manager of Convair plant engineering, was commended for his active support of the division's maintenance programs.

CRA Bans All Pets Due to Rabies Risk

Pets may not be taken into any of the CRA recreation facilities because of the risk of rabies, J. K. Field, chief of employe services, warned Convair people.

No dogs, cats, or other small animals will be permitted in CRA Missile Park, Pecan Park, or Pine Crest at any time, as a safety precaution.

Field Trip Slated By Rock Hunters

CRA Rockhounds have planned a field trip Feb. 25 and 26 to the Swansee area north of Quartzsite, Ariz., for collection of hemotite crystals and other gem materials. Camp will be set up at the ghost town of Swansee.

Rockhounds meet this evening (Feb. 8) in CRA Clubhouse auditorium for a potluck dinner at 6:30 p.m. Mr. and Mrs. O. J. Williams will show color slides of New England and Canada.

Ocean Data Station Offices Relocated

Personnel in the ocean data station program at the Lindbergh Field plant were relocated last week from third floor of Bldg. 5 to the second floor area adjacent to the engineering auditorium.

Robert Devereux, program manager, and his staff are located in offices along the west wall of the renovated area. Devereux' extension is ext. 1097. General extension for the area is 1926.

CONVAIR 600 COLOR PHOTOS ON SALE

Color photographs of the Convair 600 are on sale at 50 cents each at Convair division employe services outlets. Decks of plastic laminated "space" playing cards also are on sale at 50 cents at all Convair, Stromberg-Carlson, and Electronics-SD employe services outlets.

Reproduction Facilities Inspected by Guests

Convair's graphic reproduction and numerically-controlled drafting facilities at Lindbergh Field plant were opened last Wednesday evening for inspection by over 100 members of the Society of Reproduction Engineers' San Diego Chapter and instructors of graphic courses in area schools.

Herb B. Day, Convair chief of graphic reproduction and SRE chairman, hosted the tour.

'BIG BROTHERS' HONOR KING

J. R. King, assistant supervisor in Convair's Dept. 832-2, has been honored as "Big Brother of the Year" by Big Brothers of San Diego. King and Patrick Porteus, 13, his "little brother" for the past four years, each received awards.

WATCH CALENDARS NOW ON SALE

Metal watch band calendars, for attachment to bands of men's watches, are on sale at cost — $1.04 per set — at all employe services outlets. Each of the calendar sets now on sale covers a 12-month period beginning with February.

Family Swim Night Scheduled Feb. 18

Convair's first family swim night of the season will be Saturday, Feb. 18, at the Mission Beach pool, largest indoor pool in Southern California. Swim hours are from 7-9 p.m.

The free swims will continue monthly on the third Saturday evenings of each month.

Tickets are available now at all Convair, Stromberg-Carlson, and Electronics employe services outlets.

Correct mail zone number speeds up delivery.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111, Kearny Mesa. Deadline date for next issue of GD/NEWS is Feb. 14. Call ext. 1071 LF or 3322 KM.)

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BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLISTS—Convairiders to meet Feb. 11, 10 a.m., at Midway Drive-In Theatre for tour to Old Town and Coronado.

BRIDGE — Play each Friday, 7:30 p.m., CRA Clubhouse.

CAMERA CLUB — Meeting Feb. 19, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS — Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS — Meeting Feb. 15, 7:30 p.m., Convair cafeteria, Lindbergh Field.

DELTA DIVERS — Meeting tonight (Feb. 8), 7:30 p.m., CRA Clubhouse.

FENCING — Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB — Meeting Feb. 21; potluck at 6:30 p.m., business at 7:30.

ICE SKATING — Registration open for annual Winter Weekend at Big Bear March 3-5. Forms at CRA Clubhouse and LF employe services. Call Bud Davies, ext. 2701 KM, for information. GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

JUNIOR SCIENCE — Meeting Feb. 17, 7:30 p.m., CRA Clubhouse.

MOVIES — Reduced prices at State Theater, Euclid & El Cajon Blvd. Admission: adults, $1; children, 35c.

PISTOL CLUB — Club shoot Feb. 12, 9:15 a.m., SD Police Range, Federal Blvd. and Home Ave. Convair vs. Solar match March 12.

RADIO CLUB — Meeting Feb. 16, 7:30 p.m., CRA club headquarters.

RIDING CLUB — Election of officers tonight, Feb. 8, 7:30 p.m., CRA Clubhouse. Open fun show Feb. 19 at CRA horse ring.

ROCKHOUNDS — Meeting tonight, Feb. 8. Potluck at 6:30 p.m. Field trip Feb. 25-26 to Swansee area near Quartzsite, Ariz.

ROLLER SKATING — Free skate night Feb. 20, Skateland, Front & G Sts. Tickets at employe services.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SQUARE DANCING — New beginners class opens Feb. 28, 8-10 p.m., CRA Clubhouse. Call Roland Hagar, ext. 1954 KM.

SWIMMING — First family swim night Feb. 18, 7-9 p.m., Mission Beach Plunge. Tickets at all employe services outlets.

SPORTS CAR CLUB — Meeting tonight, Feb. 8, 7:30 p.m., Convair executive dining room, Lindbergh Field.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamic Toastmasters No. 457, 5:15 each Thursday, both at CRA Clubhouse.

TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

TRAILERS — Road Runners' weekend trip to Borrego Desert area Feb. 10-12. Call Ralph East, ext. 1141 LF, for information.

WIVES — Luncheon Feb. 15 at Sir George's Smorgasbord, El Cajon. Reservations to be made by Feb. 13 with Jeanne Beatty, 273-3971, or Vera Whitbey, 283-8971. Monthly potluck Feb. 22, 10:30 a.m., CRA Clubhouse.

WOMEN'S GOLF — Tournament Feb. 11, River Valley course.

Pistol Teams to Face Solar In Semi-Annual Tilt March 12

CRA Pistol Club teams will fire against Solar shooters in a semi-annual match scheduled for 9:15 a.m. March 12 at the San Diego Police Pistol Range, Home Ave. and Federal Blvd.

Trophies will be awarded to members of the winning four-man team. The .22-caliber competition will be governed by Camp Perry course regulations.

The CRA club's next regular shoot will be at 9:15 a.m. Sunday (Feb. 12) at the police range. New participants are invited, especially since Solar will have more men to enter in the inter-company match than the CRA club now has scheduled to participate. Some club pistols are available for loan.

Additional information can be obtained by phoning Roscoe Anderson, KM ext. 2270, Warren Ranscht, KM ext. 1081, or Joe Williamson, LF ext. 1413.

In the club's last .22 caliber Camp Perry match Jan. 22, J. S. Knutson of Dept. 780-0 took master class honors with 296 out of a possible 300 points and Williamson was second with 292 points. In expert class, Warren Walker of Dept. 554-4 was first with 277 points and Angrim Carlson of Dept. 978-1 was second with 276.

Ranscht, of Dept. 967-3, took first place in the .22 caliber short national match the same day with 290 points out of a possible 300. Knutson was second with 288 and Williamson placed third with 287.

Bargain Tickets

(Following are bargain-rate tickets currently available to employes. Unless otherwise stated, they are offered at employe services offices of Convair, Stromberg-Carlson, Electronics-SD, Bldg. 51 engineering mailroom, Lindbergh Field, H. C. Medearis' office at AF Plant 19 and CRA Clubhouse.)

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Gulls vs Los Angeles, Feb. 25, $2 and $2.50 (50 cents off). Deadline Feb. 23, 4:30 p.m.

"Hawaii," Feb. 23 8 p.m. showing, Cinerama Theatre, $2.20. Deadline Feb. 20.

Convair Wives Club To Meet For Lunch

Convair Wives Club will meet at noon Feb. 15 in the King's Room at Sir George's Smorgasbord House, 305 N. Magnolia Ave., El Cajon. Edward Chaimson, design studio and sales manager for Lloyd's House of Fine Furniture, will speak on "Practical Interior Decorating."

Reservations can be made up to 5 p.m. Feb. 13 with Jeanne Beatty, 273-3971, or Vera Whitbey, 283-8971. Cost of the luncheon will be $1.70.

The club's regular potluck will be held at noon Feb. 22 in CRA Clubhouse. Members will gather at 10:30 a.m. for work on crafts before the luncheon. Each member is to bring a covered dish and serving spoon and her own table service.

Members will learn how to make peek-a-boo sugar Easter eggs.

Dues, $2 a year, are payable now to Mrs. George Robinson, 4816 Louise Drive, SD 92115.

Any member not now receiving the club's Newsletter should give her name and address to Margaret Brock, phone 583-1474.

WEBER FAMILY HAS LUCKY DAY

"Lady Luck" touched the family of J. B. Weber of Convair's machine shop Dept. 731-0 twice Jan. 20. Weber won two tickets to a San Diego Gulls hockey game in a CRA drawing. His wife won a $25 gift certificate for dinners at a Mission Valley restaurant in a radio station contest the same day.

12 Win Prizes In Game Draw

Mr. and Mrs. W. C. Jungemann (he's in Dept. 966-4) were big winners in CRA Gun Club's annual Big Game drawing, winning four of the 14 prizes in the Jan. 18 bonanza.

Only 43 entered game in this year's event, one of the smallest fields in the years the Big Game drawing has been staged, said Commissioner Jack Swank.

The Jungemanns brought down two mule deer apiece in Utah. Mrs. Jungemann drew an air mattress and a pair of wool hunting socks while her husband took the camp stove and a pair of deer bags.

Other prize winners were: David J. Galloway (Dept. 115), lantern for a buck deer shot in California; G. K. Phares (Dept. 031), hatchet, buck deer taken in California; C. L. Seybold (Dept. 400-1), hunting knife, for a six-point, 150-lb. buck taken in Utah.

L. E. Batchman of Dept. 963-9 also won a hunting knife for a mule deer shot in California. Ray Kendall (Dept. 711) drew a pair of hunting gloves for a buck taken in California; Kim Hong (Dept. 962-5), wool socks for a mule deer from Utah; D. V. Neece (Dept. 401-6), two deer bags, for a doe shot in Colorado; John Harlow (Dept. 401-5), a plastic folding water bag for a buck shot in California; Arthur Ramsey (Dept. 410-0), water bag, doe taken in California; and Earl McDaniel (Dept. 400-1), water bag for a buck, field dressed out at 150 lbs., shot in Colorado.

Vegas Weekend Set For March

Reservations open tomorrow (Feb. 9) for a Las Vegas weekend for all General Dynamics people, under sponsorship of CRA.

The trip is set for March 10-12. Accommodations have been reserved at Aladdin Hotel for Friday and Saturday nights.

Tour price is $34.50, double room occupancy, or $44.50, single occupancy.

Included is transportation, hotel room, Saturday lunch and dinner, midnight show. A drawing will be held on the bus for four free package tours.

The chartered bus will leave CRA Clubhouse at 5:15 p.m. Friday and start the return trip home at 3 p.m. Sunday from Las Vegas.

A deposit of $20 is required with each reservation with the balance due no later than March 3. There will be no refunds on cancellations. Purchasers must arrange their own substitutions.

Reservations may be made at all CRA outlets, and at Stromberg-Carlson or Electronics employe services.

Cyclists Will Tour Old Town, Coronado

"Convairiders" have scheduled a short, scenic bicycle tour Saturday (Feb. 11) that will take them through Old Town and Coronado.

The ride will start at 10 a.m. from the Midway Drive-in Theatre. Three-speed bikes can be used and Chuck Cearley, ride leader, said the tour will be an ideal one for "first timers." Additional information can be obtained by phoning Cearley at his home, 273-1530.

Twenty cyclists, led by Cy Campbell, made the club's 50-mile Tijuana ride Jan. 28.

Garment Bags Put On Sale at Cost

Convair monogrammed plastic garment bags, each with a white front and charcoal back, are on sale at cost at employe services offices at Kearny Mesa and Lindbergh Field and the engineering mailroom at Lindbergh Field.

Cost, including tax, is $1.50 for both men's suit-length bags and women's dress-length bags.

Underbrush Still Undefeated In CRA Fast-Break League

Underbrush and R & E teams won their first two games and Centaur and Flight Control each won one and lost one as the CRA fast-break basketball league began its second half of season play. Underbrush completed the first half undefeated.

R & E defeated Flight Control, 49-37, Underbrush outscored Hot Shots, 66-48, and Centaur edged Cosmo Bums, 40-38, in the first round of second half play Jan. 18 and 21.

On Jan. 25, Underbrush defeated Centaur, 46-31, and R & E routed Hot Shots, 56-19, and on Jan. 28 Flight Control defeated Cosmo Bums, 48-33.

In the slow-break basketball league, Plastics lost their first game, outpointed by the Gyros, 24-23, in the first round of second half play. Plastics had won all its five first-half games.

In other second-half slow-break games on Jan. 26, Bean Counters edged L.F. Jets, 24-21, and Bullet Biters outpointed Stromberg-Carlson, 18-16.

Upcoming games, all played on Court 3 at Municipal Gymnasium, Balboa Park, include:

FAST-BREAK

Feb. 8—R & E vs. Centaur, 6:30; Hot Shots vs. Flight Control, 7:40. Feb. 11—Cosmo Bums vs. Underbrush, 12 noon.

Feb. 15—Centaur vs. Flight Control, 6:30; R & E vs. Underbrush, 7:40. Feb. 18—Cosmo Bums vs. Hot Shots, 12 noon.

SLOW-BREAK

Feb. 9—L.F. Jets vs. Bullet Biters, 6:30; Gyros vs. Stromberg-Carlson, 7:40; Plastics vs. Bean Counters, 8:50.

Feb. 23—Stromberg-Carlson vs. L.F. Jets, 6:30; Bullet Biters vs. Plastics, 7:40; Gyros vs. Bean Counters, 8:50.

CRA Team Winner In IRC Card Play

A four-member CRA Bridge Club team won the 10-game Fall Series in San Diego Commercial-Industrial Bridge Club play, sponsored by the San Diego Industrial Recreation Council.

The team was composed of Mrs. Marvin French, Mrs. Paul Stephens and Mr. and Mrs. Robert Rustad.

In CRA Bridge Club play Jan. 20 at CRA Clubhouse, Ralph and Isabel Emerson took North-South honors and Margaret Grindstaff and Ceil McCullough topped East-West.

Jan. 27 winners were Jack Stanger and H. H. Johnson, North-South and Howard McCullough and Burton Grindstaff, East-West.

Two Riders Awarded Trophies by Council

Two members of the CRA Riding Club have been awarded Horsemen's Executive Council trophies for points amassed by their horses last year in HEC-sponsored shows.

Mrs. Judy Watson, wife of David Watson of Convair's Dept. 130-1, received the Challenge Trophy. Her mare, Rocketta Knox, accrued a higher number of points than any other horse.

Mike DeLeonardo, 16, son of Mrs. Robert Underwood of Convair's Dept. 780-4, received the runner-up Reserve Champion Plaque for points tallied by his former Palomino mare, Fawn, during the year.

Club officials said Fawn suffered a broken ankle in a fall in September and had to be destroyed. Mike is now training another horse, a gelding named Tex.

Girl Golfers Tour Bonita in Tourney

Agnes Sliger and Nell Bartlett won CRA trophies for low scores in Flight A and B respectively at the General Dymanics Women's Golf Club tourney Jan. 14 at Bonita Golf Club.

Twenty-six girls played the 18-hole course.

Runners-up in Flight A were Freda Magargal, Iris Oster, Mary Ransom, and Clara Granat. Flight B runners-up, in order of finish, were Ora Carpenter, Doris Parker, Thelma McColley, and Betty Jackson.

Next tournament will be an 18-hole match Saturday, Feb. 11, at River Valley.

'Winter Weekend' at Big Bear Scheduled at Wawona Lodge

CRA Ice Skating Club has scheduled its annual "winter weekend" at Big Bear Lake for March 3-5.

The club has leased the Wawona Lodge and will have 10 rooms with private baths, each to accommodate two to five persons, and 18 housekeeping cabins for family groups of up to 12 people each.

Ranch-style breakfast will be served Saturday and Sunday mornings, roast beef dinner Saturday evening and the club's traditional pizzas about 11 p.m. Saturday. The weekend trip will be the club's 14th to the same location.

E. H. Davies, commissioner, said snow has been "ordered" for the weekend and employe families making the trip should be able to enjoy skiing as well as ice skating, dancing and other activities.

Cost will be $13 for adults and $6.50 each for children under 8. Reservation forms are available at Lindbergh Field employe services office and CRA Clubhouse at Kearny Mesa.

Reservations will be limited to the first 100 persons and will close Feb. 24 with no refunds to be made after that date. Individuals must make their own travel arrangements.

Additional information can be obtained by phoning Davies, KM ext. 2701, or Joan Kosen, 274-5227.

Radio Hams Planning 'Transmitter Hunt'

The CRA Radio Club members are advised that the lock on the club's radio shack in CRA Clubhouse has recently been changed. Members with current dues paid may exchange their old keys for new ones at the club's next meeting at 7:30 p.m., Feb. 16, or by contacting the station engineer, Bill Roden, at KM ext. 819.

The club has planned a new "transmitter hunt." Members interested in participating can obtain details from Dale Taber, club president, or by phoning Fred Schulz, commissioner, at KM ext. 1392.

Riders' Election Set For Tonight

CRA Riding Club will elect officers tonight (Feb. 8) at 7:30 p.m. in CRA Clubhouse and will start the 1967 calendar with an open fun show on Feb. 19.

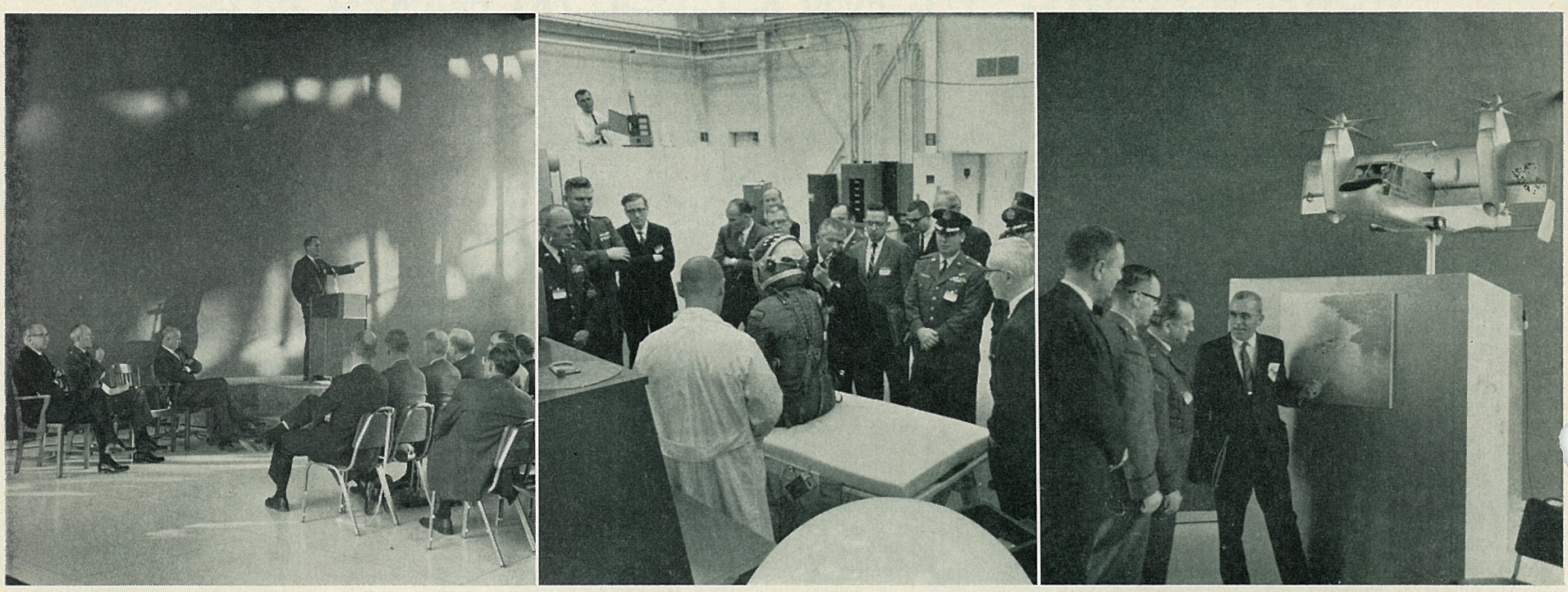
Equitation events will take place in the morning, beginning at 8:30 a.m., with gymkhana contests set for the afternoon. Entry fee for members is 25 cents for each event; 50 cents for non-members.

In the March of Dimes Parade Jan. 22 Dave Watson, Sam Special, and Conrad Nash formed the color guard. They were followed by a surrey driven by member Floyd Branscom, accompanied by his daughter, Terry.

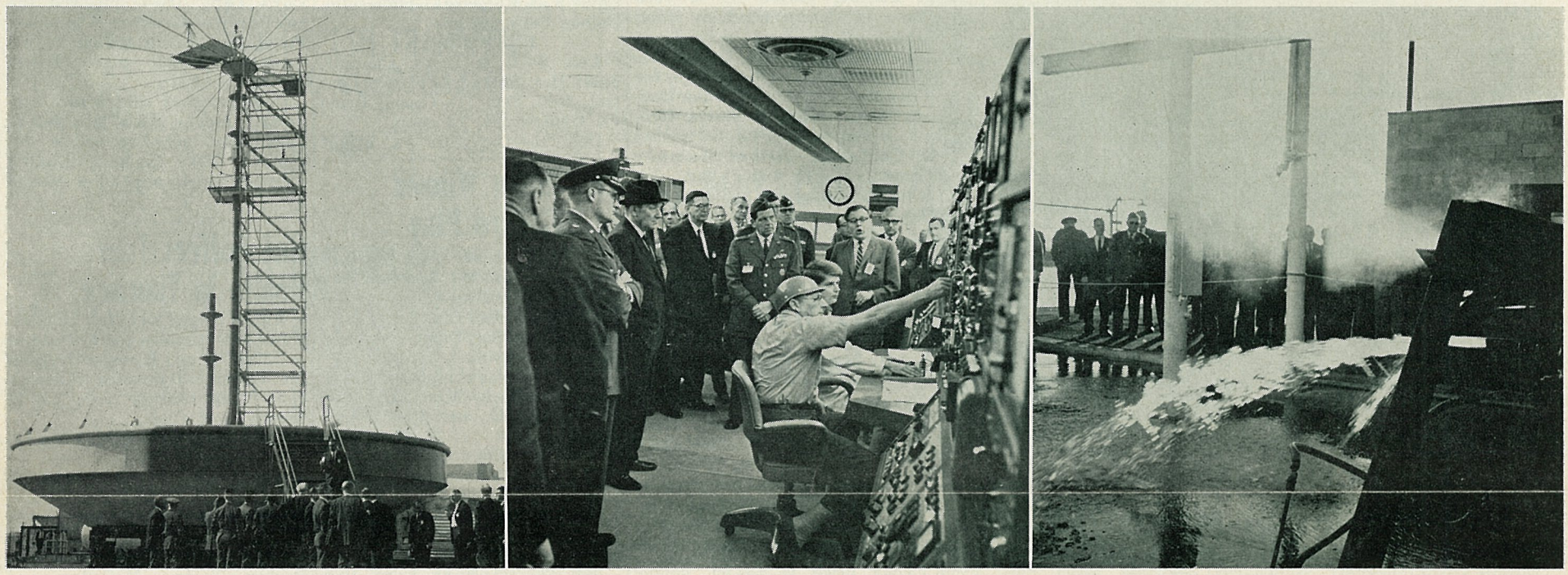
BINOCULARS ON SALE AT BARGAIN PRICES

A limited number of five types of coated lens binoculars are on sale at about one-half of normal retail price at Convair employe services office at Kearny Mesa. Prices range from $17 to $40.

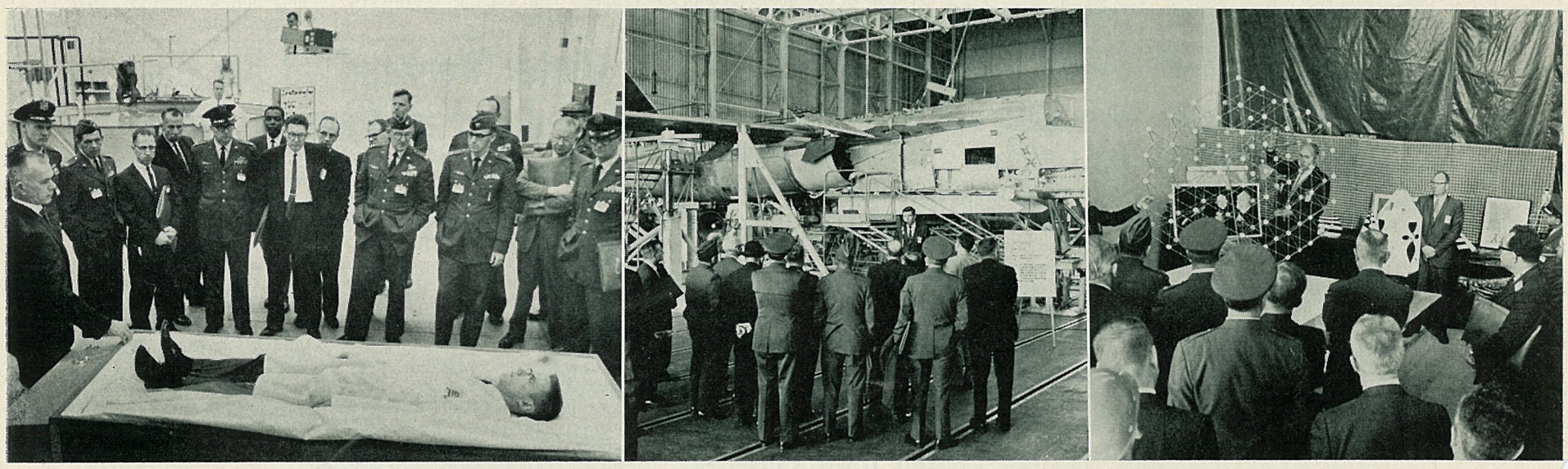
Divisions Join in Display of Products and Technology on West Coast



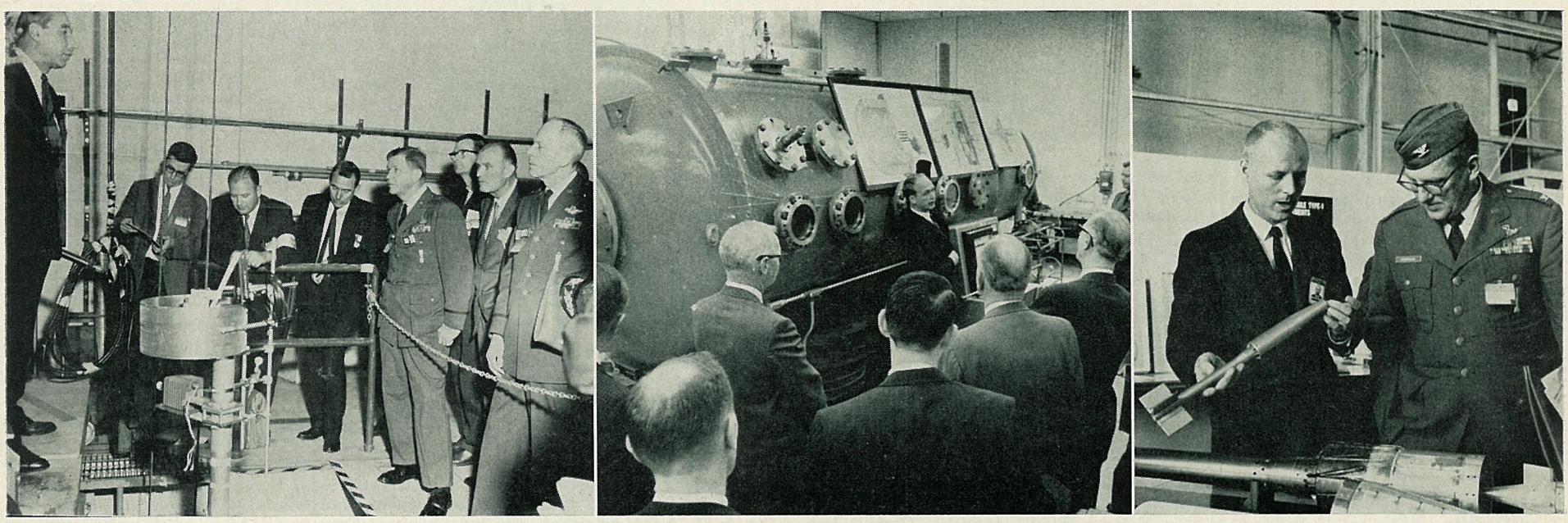
RAPT AUDIENCE—General Dynamics' Technology Review, conducted last month at San Diego for U.S. Air Force Research and Technology Division, drew distinguished group to hear technical papers and view exhibits. Many GD divisions took part. At left above, Roger Lewis, GD president, addresses guests. Center: Convair life sciences laboratory demonstration. Right: Canadair exhibit featuring CL-84 tilt-wing aircraft model.



Left: visitors inspect oceanographic data gathering buoy prototype at Harbor Drive Test Site. Center: control room of high speed wind tunnel. Right: demonstration at small-scale rocket facility at Test Site in which ablation materials are subjected to simulated entry conditions.



Left: "dry emersion" bed created by Convair's life sciences lab for use in special medical cases is demonstrated for visitors. Center: highlights of static and fatigue test program on F-111 are explained. Right: models of various large space antenna structures are exhibited.

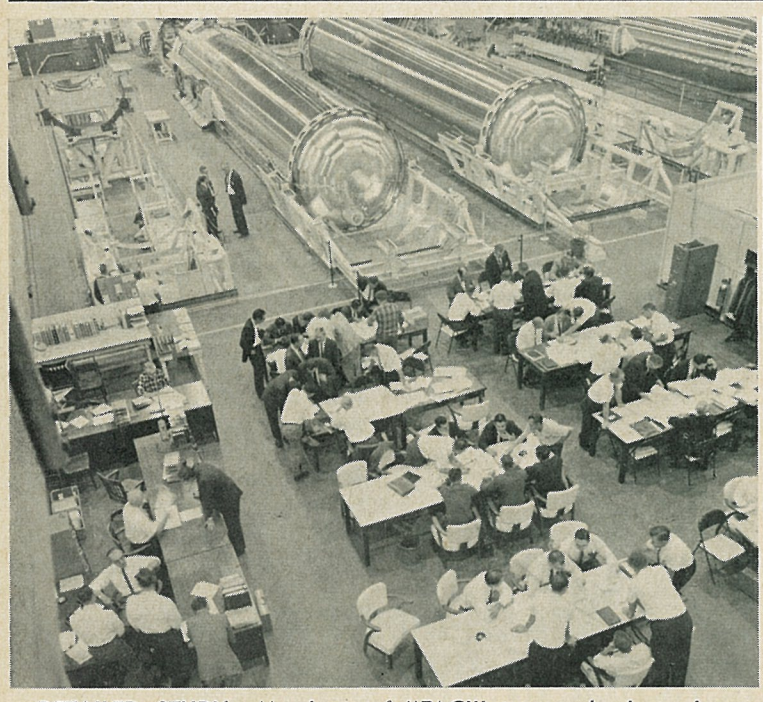


Left: guests visited General Atomic division to observe TRIGA research-testing reactor. Center: coaxial plasma gun is explained during Kearny Mesa tour. Right: Pomona division was represented with exhibits, including these advanced missile models.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 4 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, February 22, 1967



DETAILED STUDY—Members of "FACI" teams check engineering documentation for Atlas SLV-3C. Two of vehicles are in background.

Convair Praised In SLV-3C Inspection

Convair's first new Atlas SLV-3C Centaur-launch vehicle underwent First Article Configuration Inspection (FACI) early this month at the Kearny Mesa plant.

Present for the two-day inspection were 14 representatives from Air Force Space Systems Division, 17 from Defense Contract Administration Services, nine from NASA, 12 from Aerospace Corp., three from Rocketdyne and 25 from Convair.

Lt. Col. Donald L. Nangle from SSD headquarters was FACI chairman. Lt. Col. John R. Mullady, SLV-3 deputy director for SSD, was present representing Col. Leo W. Sullivan, SLV-3 program director.

Col. James R. Ourand, DCAS plant representative at Convair, and A. E. Hinck, chief of quality assurance for DCAS, were among others present.

Inspection was carried out under direction of a FACI committee composed of Lt. Col. Nangle, J. S. Garcia of DCAS, James Wilson of Aerospace Corp. and Joseph W. Coddou, Convair production program manager.

Coddou said the visiting representatives expressed satisfaction with the new vehicle. "Very few discrepancies were found and all were very minor," he said.

Convair has been complimented for its efforts in a letter from Robert Fulcher, Air Force contracting officer for SSD, following the inspection.

"Both DCASPRO and SSD received excellent cooperation and the condition of the vehicle and the engineering paper far

(Continued on Page 2)

Finland's Aviation Director Is Briefed On 600/640 Program

Kaarlo J. Temmes, director of Finland's Civil Aviation, Ministry of Communications, and former vice president of operations of Finnair, the national airline, visited Convair early this month for a briefing on the Convair 600/640 program.

Temmes is in the United States under the auspices of the State Department's International Visitor Program.

He is studying the general structure and organization of the Civil Aeronautics Board and the Federal Aviation Agency. He is also visiting typical airports to inspect buildings and such equipment as runways, lighting, traffic control, radar, and to observe the latest development in all-weather landing programs.

While in the country he intends to visit leading aircraft manufacturers for information on new and proposed aircraft, including the supersonic transport.

WELCOME—Kaarlo J. Temmes, director of Finland's Civil Aviation (center), was greeted by W. L. Van Horn, Lindbergh Field plant manager (left), and P. M. Prophett, director of aircraft sales and service, when he visited Convair early this month.

Navy Renews Oceanographic Buoy Contract

Convair division has received a renewal of the existing contract with the U.S. Navy's Office of Naval Research to continue the oceanographic data-gathering buoy program.

Present contract will bring the two buoy prototypes to operational readiness by this fall, Robert Devereux, Convair ocean data station program manager, said.

The first completed buoy, Bravo, is now en route to San Diego by way of the Panama Canal following deep water mooring tests in the vicinity of Bermuda. It will be refurbished at Convair and fitted with an ocean data acquisition system identical to to the one being installed in Alpha, second prototype now being fitted out at San Diego.

Alpha is being prepared for a long-range telemetering experiment early this summer on the West Coast of the United States.

This will mark the first time that the telemetering buoy's long-range capability has been tested. It will also be the first opportunity to use the underwater oceanographic sensors developed for the ocean data station program.

Devereux explained that the experiment will be an "end-to-end" system checkout—from underwater sensors at sea to digital computer ashore. Tests will be accomplished by the mobile ocean data center and monitored by Navy and Coast Guard stations in the Pacific. Radio range will exceed 2,500 miles.

Tickets on Sale For Disneyland

Employe families by the hundreds are reserving the evening of April 8 for the five-hour General Dynamics family party at Disneyland.

The party, sponsored by Convair Management Club, will begin at 8 p.m. Tickets, now on sale at $3.75 each, will cover unlimited use of all rides and attractions, including "It's a Small World," "New Orleans Square" and "Primeval World" areas.

Parking will be free, bands will provide dance music and special reduced prices will be in effect at the French Market, Plaza Inn and Pavilion restaurants.

Tickets are being sold at CRA Clubhouse and the following in-plant offices:

Lindbergh Field—J. N. McPheeters, Bldg. 4; D. H. Digges, Bldg. 1; W. B. Jones Jr., Bldg. 5; M. C. Tombler, Bldg. 51; employe services, Bldg. 16; and L. F. Lau, Convair Service Center. Air Force Plant 19—H. C. Medearis, Bldg. 3.

(Continued on page 4)

LF Adds Parking For 550 More Cars

Additional parking for 550 cars has been provided at Convair's Lindbergh Field plant with the acquisition of the Compass Rose area at the north end of Lindbergh Field, west of Gate 5, W. L. Van Horn, Lindbergh Field plant manager, announced.

Employes using this parking lot must use the access road and established walkways to reach the area, Van Horn said. He stressed that employes must not cross the runway adjacent to the lot.

Reports Due Soon On Savings Plan

Annual reports on the status of individual members' holdings in the General Dynamics Savings and Stock Investment Plan have been prepared and will be distributed soon.

Prepared by the Bankers Trust Co. of New York City, the statements reflect total employe savings, Company contributions (50 cents for every $1 the employe saves) and approximate market value at the end of calendar 1966.

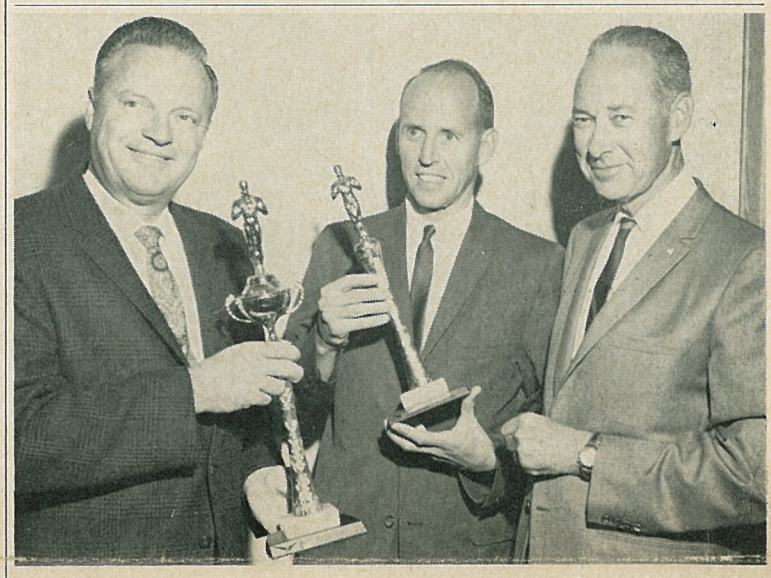
Statements will be distributed in-plant, through supervision.

Members who wish to change their options, or eligible employes who wish to join the Plan, have until the end of this month to make out the necessary forms (available at employe services) in order to be effective April 1.

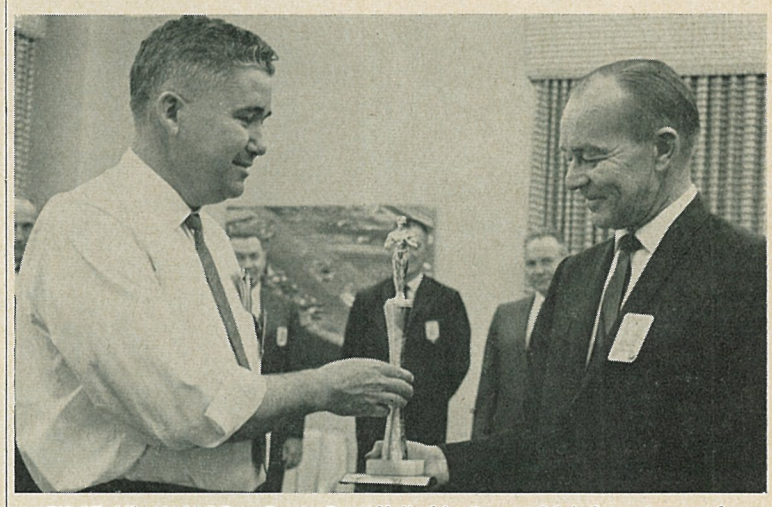
★ ★ ★

RETIRMENT REPORTS DUE OUT MARCH 3

Convair and Stromberg-Carlson employes, both hourly and salaried, will receive annual statements March 3 regarding their retirement benefits as of the end of calendar 1966. Distribution will be made to personnel at Vandenberg AFB and Eastern Test Range at the same time.



COST REDUCTION AWARDS—New perpetual trophies being awarded to Convair division departments for cost reduction excellence are shown by M. V. Wisdom, left, director of industrial relations, Jack Croft, center, chief of educational services, and E. D. Heller, manager of cost reduction and value control. Trophy at left is division award. Smaller trophy is one of eight identical awards being given by each participating department to one of its functions.



FIRST LF AWARD—R. J. Ratliff (left), Dept. 016-0 assistant foreman, accepts cost reduction trophy from W. L. Van Horn, Lindbergh Field plant manager, at staff meeting last week as first winner at Lindbergh Field of new-type award.

New Trophies Reward 'Maximum Performance'

Nine perpetual "maximum value performance" trophies are being awarded monthly to major Convair division departments for excellence in meeting cost reduction goals.

E. D. Heller, manager of cost reduction and value control, said a "division trophy" will be presented each month to the major department selected for best performance in cost reduction.

Validity of goals established and other criteria such as improvement over previous performance also will be considered.

Eight smaller, identical trophies will be awarded each month by each of the major departments to one of its functions with selection based on similar analysis.

Participating are launch vehicle programs, finance, industrial relations, material, operations, reliability control, research and engineering and Lindbergh Field operations departments.

John D. Milling, controller, said the finance department, although it has substantial cost reduction goals, will not be considered for the major division award since it has responsibility for measuring and reporting on performance of each of the participating departments.

It will award one of the departmental trophies to one of its functions each month, however.

(Continued on Page 2)

★ Did You Know? ★

(General Dynamics people enjoy numerous advantages and high on the list are those usually referred to as "employe benefits." There are many of them, each designed to complement the others and together form a balanced program for the welfare of the individual. As a reminder, GD/NEWS is carrying a series of brief articles touching upon first one benefit and then another. Some, perhaps, you may not have known existed.)

★ ★ ★

Convair, Electronics-SD and Stromberg-Carlson in San Diego pay the entire monthly premium for group health insurance for each employe and $1.70 weekly toward the premium for dependents' coverage. The health insurance plan includes major medical coverage paying 80 per cent of all charges after a $100 annual deductible to a limit of $10,000. Hospital room and board allowance has been increased to $30 per day. Employes taking authorized leave of absence may retain their coverage by paying premiums. Unmarried children between the ages of 21 and 23 may be covered as dependents if they are full-time students and dependent upon the employe for support. Employe services can provide details.

Log Book Entries

Papers Presented

CONVAIR

NEWSOM—B. D. and J. F. BRADY, Dept. 592-0, "Display Monitoring in a Rotating Environment." U.S. Naval Aerospace Medical Institute's Third Symposium on the Role of the Vestibular Organs in Exploration of Space, Naval Air Station, Pensacola, Fla., Jan. 24.

WEINBAUM—B., Dept. 524-0, "Graphical Electromagnetic Fields and Compatibility Analysis," IEEE Professional Group on EMC, New Orleans Section, New Orleans, La., Jan. 19.

Papers presented at the AIAA's Fifth Aerospace Sciences Meeting, New York, Jan. 23-25:

CROSS—Richard I., Dept. 581-5, "Effects of Heat Shield Supports on Thermal Protection Systems.

MILLER—J. G., Dept. 966-9, "Application of the Statistical Theory of Extreme Values to Ground Wind Loads on an Atlas Space Launch Vehicle."

THOMMEN—H. U., Dept. 596-0, "Viscous Flow Near Leading Edge of Wedges and Cones in Supersonic Flow.

Service Emblems

CONVAIR

Service emblems due between Feb. 15 and Feb. 28.

Twenty-five-year: Dept. 001, G. K Cox; Dept. 041, T. W. Kerns; Dept. 300, J. G. Rogers, F. S. Smith, J. M. Wallace; Dept. 250, W. Goetz, M. E. Hensley, D. Hunstable, E. F. Need, H. C Wilson; Dept. 454, C. R. Clark; Dept. 518, E. W. Rall; Dept. 521, E. F. Custenborder; Dept. 780, H. D. Brown.

Twenty-year: Dept. 001, W. K. Richeson; Dept. 019, W. H. Carson; Dept. 059, S. L. Smith; Dept. 130, P. F. Puckett; Dept. 143, Martha B. Chamberlain; Dept. 420, C. E. Buchanan; Dept. 832, L. M. Craig; Dept. 972, C. A. Fournier; Dept. 978, C. W. Ring.

Fifteen-year: Dept. 002, M. Schriock, H E. Tofteland; Dept. 041, L. L. Blakely; Dept. 059, T. G. Feeney; Dept. 130, Lorna S. Payne, Helen H. Werdelman; Dept. 140, M. M. Saunders Jr.; Dept. 143, A. Kolas, E. H. Lawton; Dept. 144, A. E. France; Dept. 170, Lucile G. Learned; Dept. 250, R. E. Petty, C. Stallons; Dept. 300, F. H. Givens, V. C. Isaak; Dept. 507, J. E. Matthews; Dept. 514, Jean A. Malthaner; Dept. 521, A. U. Diggins; Dept. 524, Lillian M. Barboza; Dept. 583, M. G. D'Annunzio; Dept. 731, G. W. Smith; Dept. 733, Bessie E. Salyer; Dept. 756, C. J. Kapalla; Dept. 832, Esther S. Barnard, Goldie E. Glaze, Phyllis F. Zandi; Dept. 841, W. J. Oberreuter; Dept. 950, L. Cheung; Dept. 966, P. S. Yip; Dept. 985, W. E. Dismukes; Dept. 987, J. C. Hall; Dept. 999, C. Larabee Jr.

Ten-year: Dept. 019, J. L. Garrett; Dept. 142, P. Magro; Dept. 144, G. L. Curry, G. W. Heggy; Dept. 146, C. D Miller; Dept. 195, R. A. Ames; Dept. 250, H. Cormier, E. A. Secor; Dept. 300, L. E. Hale, J. D. McDunn; Dept. 451, K. R. Bayliss; Dept. 460, M. R. Cherry; Dept. 533, C. F. Petty; Dept. 565, C. Ampudia; Dept. 572, C. L. Lucas; Dept. 579, E. J. Hirtzel Jr.; Dept. 780, Josephine D. Kramer, H. R. Mielke, M. Wafer; Dept. 950, Dolores Schall; Dept. 953, A. N. Quintard; Dept. 954, S. S. Kuerbis; Dept. 966, Karen E. Leadlay; Dept. 969, T. Pace; Dept. 970, E. R. Snyder; Dept. 979, W. W. Ten Eyck; Dept. 985, M. J. Bernstein, R. W. Lee; Dept. 988, G. Bakich.

STROMBERG-CARLSON

Ten-year: Dept. 84-11, J. M. Dunn; Dept. 85-60, R. J. Wilcox; Dept. 85-70, L. R. Crump; Dept. 86-21, Mary A. Crumrow.

Invention Disclosures

HANNA—J. W., Dept. 961-2. Cam Locking Plug.

LYNCH—R. A., C. J. TAIT, E. S. SAARI, Dept. 581. Integral Radar Transmitter - Converter - Antenna - Extendable Wing Assembly.

WILLIAMS—E. R., Dept. 578-1. Vehicle Velocity Monitor.

Deaths

ADAMS—Blake E., Dept. 460-0. Died Jan. 24. Survivors include wife, Beatrice H.

Awards

Employe suggestion awards approved for the week ending Feb. 3.

Dept. 001, M. Chakarun; Dept. 024, G. Reutlinger; Dept. 031, Dan Whorton (two awards); Dept. 059, P. R. Willoughby Jr.; Dept. 123, H. G. Peltier; Dept. 143, J. S. Adams; Dept. 149, H. E. Salley; Dept. 401, F. Evers, D. R. Vernatti; Dept. 574, Albert Aron; Dept. 733, R. E. Reeves; Dept. 780, C. Ledger; Dept. 810, R. L. Davis; Dept. 818, G. F. Anderson; Dept. 819, R. P. Earnest; Dept. 832, L. B. Wray; Dept. 841, L. E. Von Tungeln; Dept. 979, J. A. Matthews.

Employe Suggestion awards approved for the week ending Feb. 10.

Dept. 002, E. Fountain; Dept. 005, L. M. Timlick; Dept. 015, N. P. Kuntz, W. Ross; Dept. 016, A. S. Jones; Dept. 130, E. N. Bailor; Dept. 142, W. J. Steffen; Dept. 144, B. B. Chandler, H. M. Gallant, D. C. Gonzalez, S. G. Jenkins, D. C. Walker; Dept. 460, A. J. Danish; Dept. 511, W. A. Heitzman; Dept. 780, B. A. Poulin; Dept. 832, L. B. Wray; Dept. 833, L. Rieder; Dept. 957, J. A. Madden, G. A. Rummel; Dept. 964, J. H. Overdeer; Dept. 972, H. A. Staufenbeil; Dept. 979, J. H. Busbee, A. Majaika; Dept. 987, C. W. Neal.

Personals

We wish to thank our Convair friends for their thoughtfulness during the long illness and death of our beloved husband and father.

Ketha C. Johnson

* * *

We wish to express our deep appreciation and gratitude for the thoughtfulness and sympathy shown at the recent loss of my mother

Irene Slobig

* * *

I wish to express my sincere thanks to all of my Convair friends for the flowers, many kindnesses and expressions of sympathy at the death of my wife, Sophie.

Pete Autio, Dept. 125-0.

In-Plant Training

NEW EMPLOYES—Educational services staff. Lindbergh Field, ext. 491, Bldg. 14 auditorium, Wednesday, March 1, 4:30 p.m., for the second shift; Tuesday, March 7, 8 a.m., for first shift. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, Monday, March 6, 8 p.m.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931, Kearny Mesa.

Rider-Driver

RIDE WANTED—From Allied Gardens to Kearny Mesa, 7:30 to 4:15 shift. Ann McCain, KM ext. 887.

RIDERS WANTED—From Fairmount Avenue to Lindbergh Field, 7:00-3:30 shift. Call Robbie Ford, ext. 601 LF.

RIDE WANTED—From Hillcrest to Kearny Mesa plant, 7 a.m. shift. Ada Shipman, ext. 1873 KM.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

New Trophies In Cost Cutting

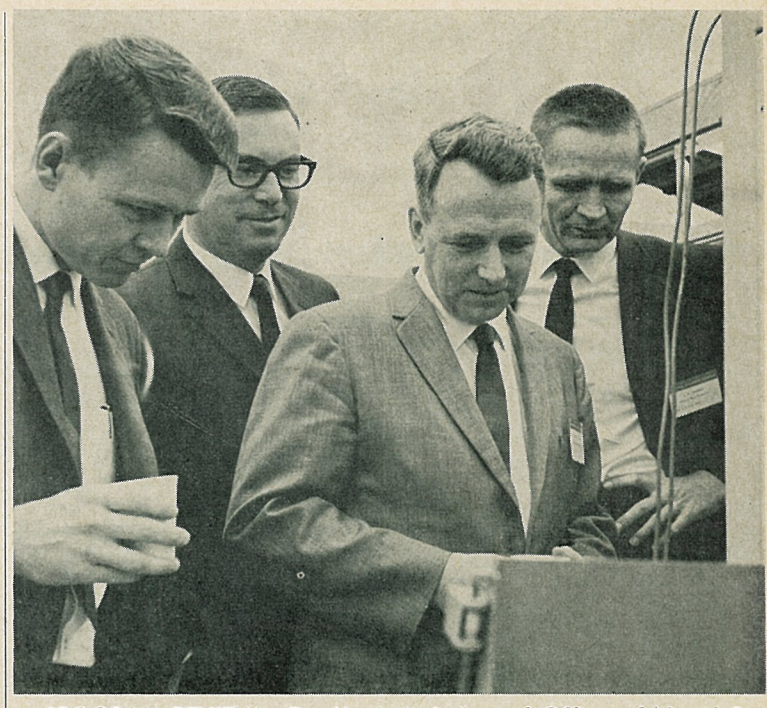
(Continued from Page 1)

Winner of the division trophy for January was industrial relations department, which almost doubled its cost reduction goal for the month. M. V. Wisdom, director of industrial relations, accepted the award for the department in ceremonies Feb. 10 at Kearny Mesa.

Departmental trophy winners for January were: reliability control — standards and calibration labs Dept. 142-0; launch vehicle programs—Vandenburg AFB Dept. 985-0; industrial relations — educational services Dept. 130-3; material — Kearny Mesa plant procurement Dept. 810-0; operations — tool project engineering Dept. 403-3; research and engineering — product design Dept. 509-0; Lindbergh Field operations—electric bench Dept. 016-0; and finance — management systems Dept. 150-0.

Heller said total cost reduction goal for the year for the participating departments totals $20,798,600. One of the division's objectives for the year, established by Jack L. Bowers, general manager, is to exceed this goal by $2 million.

Following are goals for the year by department: Launch vehicle programs, $2,420,000; research and engineering, $5,125,000; material, $4,872,700; operations, $2,895,100; reliability control, $1,000,000; Lindbergh Field operations, $2,164,400; finance, $2,212,700, and industrial relations, $108,700.



PROGRAM REVIEW—Dr. Hugh McLellan of Office of Naval Research operates computer which controls entire telemetering buoy data acquisition system during Guidance Committee review of Convair's ocean data station program. Others from left are Dr. Worth Nowlin Jr. of Texas A&M; Robert Devereux, Convair program manager; and, at far right, F. D. Jennings, head of Physical Oceanography Program of ONR Ocean Science and Technology Group.

Ocean Data Station Program Reviewed by ONR Committee

Convair's ocean data station program was reviewed early this month by the Guidance Committee named by the Office of Naval Research to monitor the development of telemetering buoy prototypes.

This was the seventh Guidance Committee review since Convair undertook the design and development of oceanographic data-gathering buoys under an ONR contract awarded in 1960.

The committee heard a detailed progress report on the two buoy prototypes, Alpha and Bravo; a review of the underwater sensor program; and a demonstration of the data acquisition system.

Chairing the committee was F. D. Jennings, head of the Physical Oceanography Program of the Office of Naval Research's Ocean Science and Technology Group.

He was accompanied by Dr. Hugh McLellan, also of ONR's Ocean Science and Technology Group, Washington, D.C.

Other committe members at San Diego for the Feb. 6-8 meeting were Dr. W. V. Burt, head of Oregon State University's department of oceanography; Dr. N. P. Fofonoff, Woods Hole Oceanographic Institution, Mass.; H. V. French, Department of Navy, U.S. Naval Oceanographic Office, Washington, D.C.; Dr. Roy Gaul, manager of Westinghouse's Ocean Research Laboratory, San Diego; Dr. Robert Kee, Division of Oceanography, U.S. Naval Oceanographic Office, Washington, D.C.; Dr. Worth Nowlin Jr., department of oceanography and meteorology, Texas A&M University; Joseph Reid, Scripps Institution of Oceanography; Dr. William S. Richardson, Nova University's Marine Laboratory, Fort Lauderdale, Fla.; Dr. M. C. Sargent, scientific liaison officer, ONR, Scripps Institution of Oceanography, San Diego; Cdr. A. H. Siemens, U.S. Coast Guard Headquarters, Washington, D. C.; J. M. Snodgrass, SIO; Robert Snyder, Ocean Science and Engineering, Washington, D.C.; Robert Walden, Alpine Geophysical Associates, Inc., N.J.

Convair personnel participating included Robert Devereux, ocean data station program manager; D. G. Moody, assistant program manager; Stan Uyeda, chief of marine operations; Ralph Kosic, chief of systems engineering; and R. J. Dunn, design group engineer.

Convair Praised In SLV-3C Inspection

(Continued from Page 1)

exceeded expectations," Fulcher said.

A total of 277 drawing "packages" were presented for the inspection with 184 being reviewed in detail. The review included auditing of drawings, analysis of vehicle and subsystem specifications and checking of hardware installed on the first production vehicle.

The 80 men participating were divided into 10 inspection teams.

Teams and their captains were: basic booster-structures, James Wilson, Aerospace Corp.; hydraulics, Capt. Davis B. Conkling, SSD; pneumatics, Gilbert Geddes, SSD; electrical and "D" box, Joseph Cassidy, SSD; propulsion, Capt. James Fiebelmann, SSD; flight control and autopilot, Palmer Hakala, Aerospace Corp.; telemetry, instrumentation and range safety, G. M. Maestros, Aerospace Corp.; propellant depletion, Robert Brown, Aerospace Corp.; reliability, Capt. John Hertz, SSD, and specifications and procedures, Lt. Arthur Ambrush, SSD.

Serving as FACI chairman was among the last official SSD duties for Lt. Col. Nangle, who now is attending survival school before assuming new duties in Viet Nam.

The new SLV-3C vehicle is 51 inches longer than its SLV-3 predecessor and will carry an additional 21,000 pounds of usable propellants.

SLV-3C and Centaur will be capable of sending a 2,900-pound payload to escape velocity or 2,200 pounds to Venus or Mars from the Eastern Test Range.

The launch vehicle used in the FACI, No. 5901C, is scheduled for "sell-off" within the next two months, then will undergo tests at the Combined Systems Test Stand at Kearny Mesa.

It is to be used by NASA later this year in the Atlas-Centaur 13 flight to send a Surveyor spacecraft to the moon.

The SLV-3C program began with a proposal for an uprated Atlas late in 1964 and a final go-ahead was received in January, 1966. Five of the new vehicles are under order. Production is under direction of Richard W. Keehn, manager of the Atlas SLV program office.

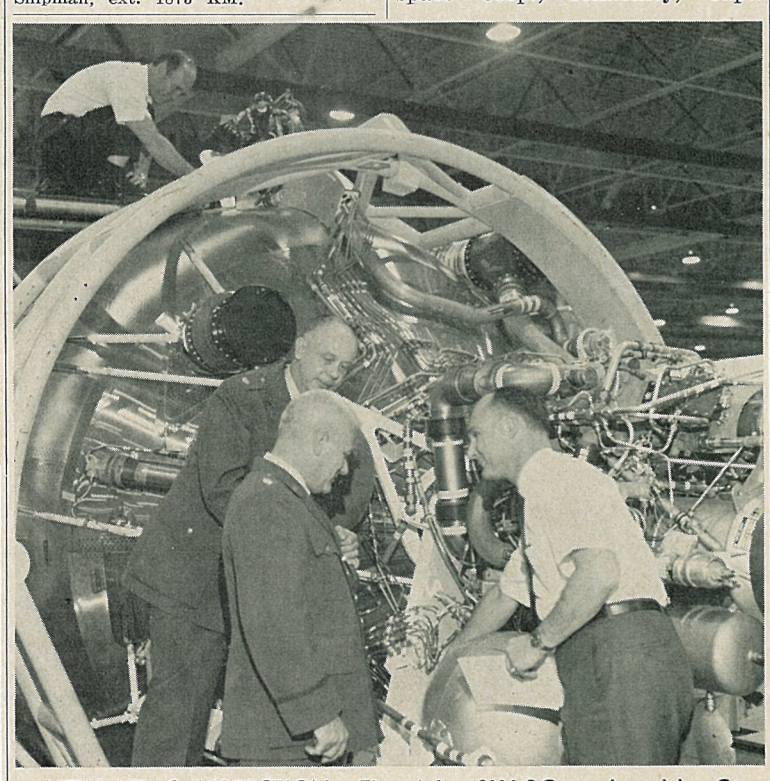
Coddou, in speaking to inspection team members, said the FACI had two important objectives.

"First, the United States, through you, its representatives, has a very personal opportunity to view and verify a product against a design it paid Convair to create," he said.

"Second, Convair can produce and you can accept additional SLV-3Cs to standardized design, planning, tooling, hardware and procedures at a minimum cost for the Surveyor and other national space programs."

Convair also has under assembly a new SLV-3A prototype vehicle. It will have a tank 117 inches longer than the SLV-3, will carry an additional 48,000 pounds of usable propellants and will be for use with Agena and other second-stage vehicles.

The SLV-3A and Agena will be capable of sending a 1,450-lb. payload to escape velocity and a 980-lb. payload to Mars.



NEW ATLAS INSPECTION—First Atlas SLV-3C produced by Convair is discussed by Lt. Cols. John R. Mullady and D. L. Nangle, both of Air Force Space Systems Division, and Joseph W. Coddou, Convair production program manager. J. F. Harrison, Defense Contract Administration Services supervisor, is at top of photo.

New Army Reserve Brigade Organizing

A new Army Reserve unit, the 2nd Bridgade, 63rd Infantry Division, is being organized in San Diego and has openings for interested General Dynamics employes who are currently serving in other Army Reserve organizations.

Drills will be in the armory at Mission Gorge Road and Zion Street, Grantville. Information is available from Maj. Donald C. Cook, USAR, KM ext. 3255.

Convair, Electric Boat Combine on Buoy Task

Convair division has received a contract from the Coast Guard to outfit its large navigational sea buoy with a system for recording and transmitting oceanographic and weather data to shore stations.

The modification contract, totaling just over $182,000, calls for Convair to furnish and install an oceanographic and meteorological system in the buoy now being built to replace the lightship off Sandy Hook, N.J.

Convair received the contract last June for construction of the Coast Guard buoy. The hull is being fabricated at the Electric Boat division while Convair is furnishing the electrical and telemetry components.

The current follow-on award provides for a basic system to gather oceanographic measurements: sea water temperature and pressure, and conductivity.

In addition, two options are included in Coast Guard specifications. The first option is a meteorological package and associated electronic equipment for measurement of wind speed and direction, air temperature, and barometric pressure.

The second option adds measurement of speed and direction of currents to the basic oceanographic measurement system.

Components of the basic system to be installed on the buoy are a digitizer, an interface mode control unit, sensors, power supply, frequency shift keyer transmitter and receiver.

Shore station equipment for commanding information from the buoy and processing the returned telemetered data will include a programmer, signal simulator, bit synchronizer and conditioner, data processor (a small general purpose computer), serial to parallel converter, incremental tape recorder, and short station teletypewriter.

Convair will be responsible for calibration, test, and checkout of systems before delivery in November on the East Coast where installation will be done.

Work on the instrumentation system and packages began shortly after the first of the year in Convair's ocean data station laboratory at the Lindbergh Field plant in San Diego.

According to David B. Dewey Jr., Convair's manager for the Coast Guard buoy, the buoy hull is on schedule at Electric Boat as construction goes into final stages, heading toward the June delivery date at Groton, Conn. The buoy superstructure will be shipped from San Diego to Groton and mated with the hull there.

Except for changes in the 33-ft. high superstructure, the Coast Guard buoy is similar to the oceanographic data - gathering buoy developed over the last five years for the Office of Naval Research.

GIANT TURNOVER—Navigation buoy, now under construction for Coast Guard, is shaping up on both coasts. Photo top shows hull being turned right side up at Electric Boat, Groton, Conn., while in photo below 33-ft. superstructure is painted at Convair's Lindbergh Field plant. Convair has contract for building buoy which will replace lightship off Sandy Hook, N.J.

Logistics Society Chapter Organized For North Texas Area

Three Fort Worth division employes have been elected to office in the newly-formed North Texas Chapter of the Society of Logistics Engineers (SOLE).

They are: George H. Craig, 180-1, chairman; Gordon L. Brownlee, 102-1, secretary-treasurer; and Jesse James Walden Jr., 102-1, state director.

SOLE is a newly-formed national professional organization developed "to engage in educational, scientific and literary endeavors to advance the art of logistics technology and management."

A membership campaign is under way. Persons interested in the organization should contact Brownlee at ext. 3560 or Mail Zone Y-77 Fort Worth division.

HDQ. CONFERENCE—Division employe services heads met in New York last month to review industry-wide trends in salaried fringe benefits. From left, Jack Schneider, Quincy; R. Germond, General Atomic; L. L. Jarl, Fort Worth; D. R. Smith, Corporate HDQ.; R. S. Heckman, Stromberg-Carlson; P. M. Neuman, Electronics; F. J. Beirne, CHQ.; J. L. Budros, CHQ.; W. D. McCarthy, Electro Dynamics, H. S. Naish, Pomona; J. K. Field, Convair; F. W. Kelly, Electric Boat; R. L. Lougee, Electric Boat; E. C. McManus, CHQ.

QUALITY CONTROLLERS—Representatives of nine major General Dynamics operating units and Corporate Hdqtrs. attended a two-day Procurement Quality Control meeting this month in San Diego.

Quality Group Sets 1967 Goal

Convair division was host for a meeting Feb. 6 and 7 in San Diego of the General Dynamics' Procurement Quality Control Committee, which establishes common procurement quality control standards and procedures for member divisions.

Representatives from General Dynamics' Corporate Hdqtrs. and nine major operating units attended. L. I. Medlock, director of reliability control for Convair, gave opening remarks.

The committee established a $500,000 target for 1967 cost avoidance through interchange of inspection services for this year. A savings of almost $400,000 was achieved last year.

Plans for a standard supplier quality control requirements document, a standard supplier quality rating program and a training program for off-site inspectors were discussed.

H. T. McClain of Electronics-Rochester is committee chairman this year.

Others attending included Samuel Braun, R. S. Campbell, T. J. Marcella and William Olson, Convair; A. J. Matt and J. A. Treese, General Atomic; W. P. Rausch, W. D. Shipman and Theodore Small, Electric Boat; S. T. Brucker, Canadair; Kenneth Carlson, Stromberg-Carlson-San Diego; R. I. Meissner and R. F. Williams, Quincy; D. W. James and S. L. Taylor, Fort Worth; W. C. Wilhelm and J. F. Timmons, Pomona; Charles Bednarczyk, Electronics-Rochester; and B. E. Justice, Corporate Hdqtrs.

Corporate Testing Committee Meets

Pomona division was host recently to the Corporate Committee on Nondestructive Testing.

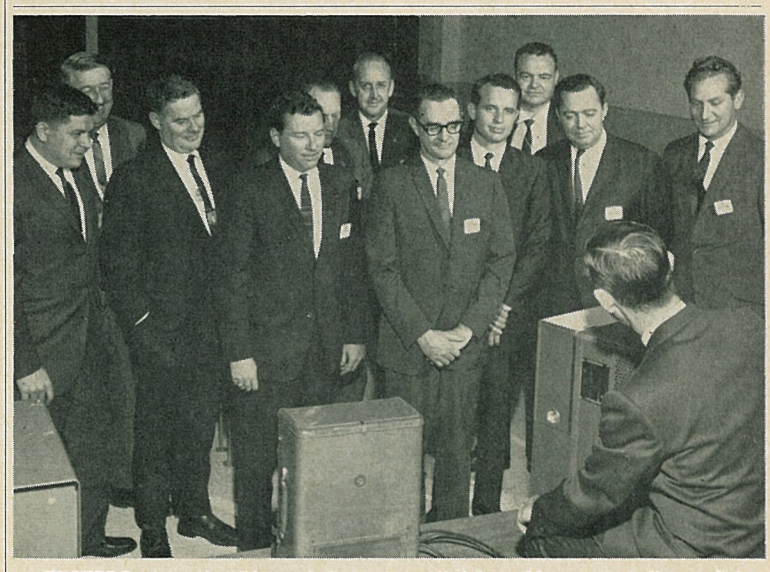
The committee, under chairmanship of C. J. Hellier of Electric Boat and D. W. Gusse of Pomona, is promoting interest in the cost and reliability advantages of nondestructive testing techniques.

People Mobility

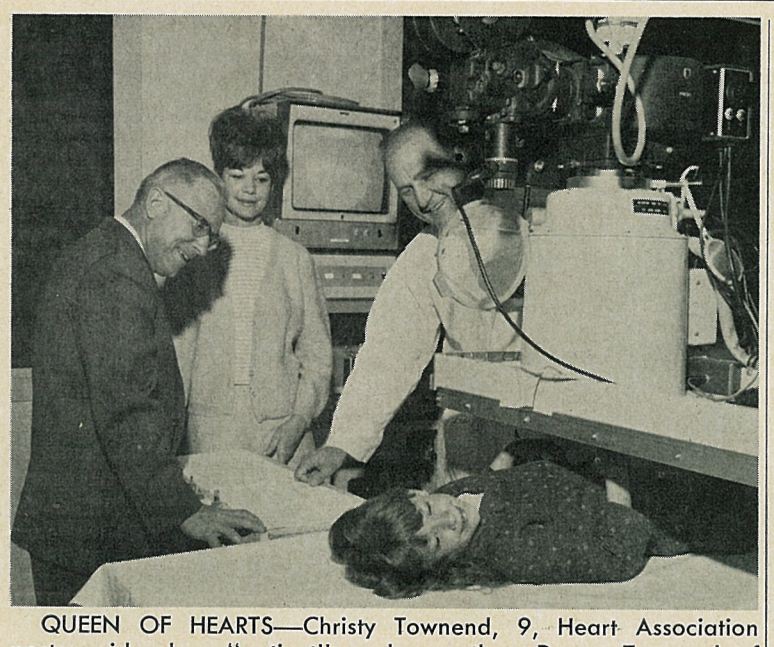
Interdivisional Transfers

(Following are recent personnel transfers among General Dynamics division. In parentheses are dates when individuals joined the company.)

YOSHIAKI TAMURA (1963) from Electronics, San Diego to Convair division as design specialist; **RUSSELL P. MUIR** (1954) from Convair to Electronics, San Diego; **WOLFGANG H. STEURER** (1958) from Fort Worth to engineering staff specialist, Convair; **JAMES E. WILLIAMS** (1954) from Electronics, San Diego to Stromberg-Carlson, Data Products as material scheduler; **THEODORE C. BERNARD** (1957) from Convair to Corporate Headquarters, New York; **CLARK E. WELSH** (1956) from Convair to Corporate Office (San Diego) as staff assistant; **J. DENT EILAND** (1954) from Corporate Office (San Diego) to Pomona as assistant controller; **ROBERT W. PEELE** (1963) from Convair to Electronics, Dynatronics; **SAMUEL L. SHIPSTEAD** (1941) from Electronics, Rochester to project administrator, Convair; **EDWARD L. LEITH** (1966) from Convair to Electronics, Dynatronics; **THEODORE R. MacCONNELL** (1961) from Electric Boat to manufacturing control, Fort Worth; **ROBERT L. CHERRY** (1953) from Electric Boat to Fort Worth; **EDWARD H. RIGHTMIRE** (1963) from Electric Boat to Fort Worth.



TESTERS—A. A. Ritz of Pomona division (foreground) explains features of training aid to members of Corporate Committee on Nondestructive Testing. From left: C. J. Hellier, Electric Boat, Bryant E. Justice, Corporate Hdqtrs., J. E. Tormey, Quincy, R. T. Anderson, Convair, T. Z. Wadt, Electronics-Rochester, G. R. Bailey, Convair, R. C. Smith, Fort Worth, J. L. Brown, General Atomic, D. W. Gusse, Pomona, P. B. Maertz, Electric Boat, K. M. Boekamp, Convair.



QUEEN OF HEARTS—Christy Townend, 9, Heart Association poster girl, plays "patient" as her mother, Donna Townend of Convair Dept. 954-1, J. R. Benedict of Convair Employes' Con-Trib-Club Committee, and Dr. William Kuzman of Sharp Memorial Heart Center inspect $12,000 TV monitor equipment donated by Con-Trib.

Convair Daughter Fitting Choice For Role of 'Queen of Hearts'

San Diego County Heart Association's poster girl this year and "Queen of Hearts" is a Convair daughter.

A fitting as well as photogenic choice, she is Christy Townend, 9, daughter of Donna Townend, statistical clerk in Dept. 954-1.

Being a Queen is rather demanding in time and energy for the Fremont School fourth grader. There are TV appearances, press interviews, posing for pictures, when playgrounds, kick ball and bicycles would be fun.

But for Christy it is all fun.

Up until a certain time in her life she could neither ride a bicycle nor be a Queen. It wasn't in the cards.

Last fall Christy underwent successful open-heart surgery.

Now it's all in the cards.

★ ★ ★

There were other things going for Christy beside her own sturdy body and determination to live a full life.

There was a devoted mother; there was Convair group insurance that paid much of the cost of the surgery at Mayo Clinic, Rochester, Minn.; there was additional financial help from Crippled Children's Societies of California and Minnesota; transportation and living costs for the six weeks in Rochester paid by Con-Trib-Club; and there were the men of Amphibious Construction Battalion-1, Naval Amphibious Base, Coronado, who contributed 27 pints of blood.

Con-Trib-Club Year-end Report

General Dynamics/Convair Employes' Con-Trib-Club Charity Fund

Statement of Financial Condition — September 30, 1966
and
Statement of Receipts and Disbursements October 1, 1965 to September 30, 1966

ASSETS

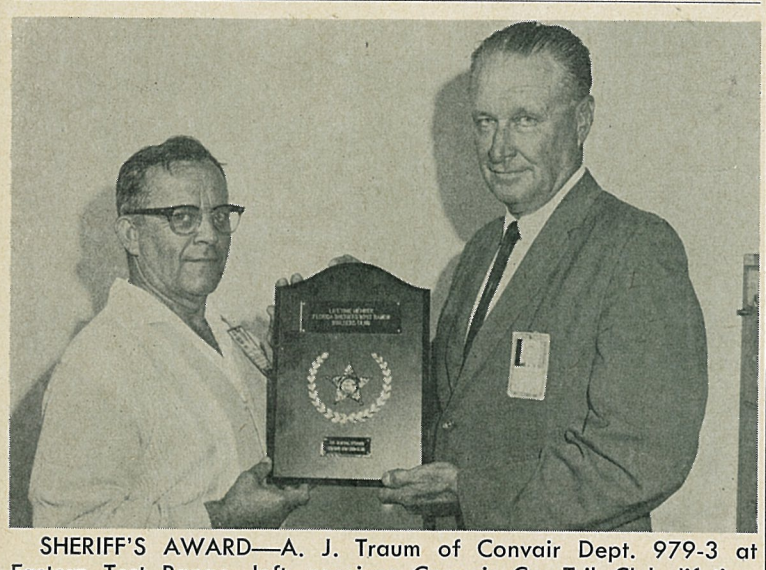
Total Assets—Cash on hand and in banks		$ 54,677.05
Total Surplus		$ 54,677.05
RECEIPTS AND DISBURSEMENTS		
Receipts		$440,534.21
Disbursements		
San Diego Area	$388,774.92	
Los Angeles Area	1,129.00	
Florida	21,132.00	
Vandenberg Air Force Base	20,250.00	
Cleveland	500.00	
Huntsville	800.00	
White Sands	350.00	
Total charitable contributions	$432,935.92	
Transfers to Emergency Aid Fund	43,483.49	
Audit expense	500.00	
Total Disbursements		476,919.41
Excess—Disbursements over receipts		$ 36,385.20

Con-Trib-Club Helps in Vaccine Program

Convair Employes' Con-Trib-Club has given $1,350 to the San Diego County Department of Public Health to help underwrite costs of measles vaccine for a mass immunization program for children under 10 years of age.

Innoculations are to be given from noon to 4 p.m. at 33 schools in the county this weekend (Feb. 25 and 26).

In other action this month, the Con-Trib allocated $5,000 to the Lutheran Association for Retarded Children for the building fund for its Home of Guiding Hands in Lakeside; $2,000 to the San Diego Mental Health Association for operating expenses; and $1,500 to the National Foundation on recommendation of the Florida employes committee.



SHERIFF'S AWARD—A. J. Traum of Convair Dept. 979-3 at Eastern Test Range, left, receives Convair Con-Trib-Club lifetime membership plaque in Florida Sheriffs Boys Ranch Builders Club from Sheriff Leigh Wilson of Brevard County, Fla. Con-Trib-Club recently gave $2,000 to Boys Ranch.

Tickets on Sale For Disneyland

(Continued from Page 1)

Kearny Mesa—J. M. Farrar, Bldg. 33; G. A. Grossaint, G. B. Branch, Al Amison, J. M. Kline and H. J. Sumner, Bldg. 5; K. G. Blair, Bldg. 4; Dr. G. M. Clarke, Bldg. 1; G. W. Zahrte, Bldg. 3; P. R. Green, Bldg. 26; and employe services, Bldg. 8.

Tickets at other facilities are available in the following offices: Stromberg-Carlson, George Elmore; Liquid Carbonic, Thomas Paddock; Edwards AFB, Larry Failor; General Atomic, James Quindor; Electronics-SD, George Leesch; Vandenberg AFB, Ernest Galbos; Marine Technology Center, A. W. Adams; Los Angeles Material Office, Paul O'Dell.

Bus service from San Diego will be provided for those not wishing to drive their own autos. Round-trip tickets will be $3 each. Buses will load at 5:15 p.m. at the flagpole in front of Bldg. 2 at Kearny Mesa.

Don Evanson, planning committee chairman, said friends and relatives of General Dynamics personnel also are invited. All tickets must be purchased prior to the event. None will be sold at the gate.

ETR Employes Join In Community Gifts

Members of Convair Employes' Con-Trib-Club at Eastern Test Range, last year gave $19,880 to support health, welfare and youth agencies in the Brevard County area.

Agencies receiving gifts included United Fund, $10,000; Sheriffs Boys Ranch, $2,000; Jess Parish Hospital, $1,875; March of Dimes, $1,500; Retarded Children, $1,000; Brevard Hospital (for cobalt machine), $1,000; Canavaral Area Heart Association, $1,000; Muscular Dystrophy Association, $1,000; Brevard Day Call, $400, and Salvation Army, $400.

Course in Memory Improvement Slated

Convair Management Club is again sponsoring the Modern Memory Method taught by Donald A. Robinson at Kearny Mesa over a 10-week period.

The first session Feb. 28 will be open without charge to anyone interested in memory improvement. Registration will be at the second meeting, March 7, in the Bldg. 2 presentation room, 5-8 p.m.

Reduced charge for Management Club members is $25 for the entire course, including textbooks and other training aids.

Investment Course To Start March 1

A five-week Investment Seminar will start next Wednesday (March 1) at the Lindbergh Field plant under auspices of Convair Management Club.

Sessions will be: March 1, Mutual Funds; March 8, Leverage; March 15, Investment Advisers; March 22, Short Term Trading; March 29, Market Strategy.

Classes will be held in Bldg. 14, Classroom 8, from 4 to 5 p.m. Registration will be accepted at the first session. There is no enrollment fee.

IR Men Taking Part In Job Interviews

Industrial relations department representatives from Convair took part last month in the first of a series of "Employers' Day" programs sponsored by the San Diego Urban League.

Ray Mendoza, supervisor of employment, and James Royle, and Norvell Freeman, employment representatives, spent a day at the Urban League's office at 2963 Imperial Ave. to provide information and interview prospective job applicants.

SALVAGE YARD OPEN MARCH 4

Next employes sales day at the Lindbergh Field salvage yard will be Saturday, March 4. Sales hours are from 8 a.m. until noon.

"GOOD WORK"—In photo at top, Convair General Manager Jack L. Bowers holds aloft Craftsmanship award won by Dept. 024, Dart modification, at Lindbergh Field plant for performance during month of December. Harry Rote, general foreman, accepted for department. Below, Carl Banke, general foreman of Dept. 015, LF machine shop, displays Sustained Performance plaque won for department's "tremendous improvement" over last year and a half.

Printed Material Transmitted By Phone With New Machines

New Xerox Magnifax Telecopier machines are being used by Convair division for transmission of printed material by telephone between the division's Kearny Mesa and Lindbergh Field plants, Vandenberg AFB and Los Angeles Material Office.

R. J. Waller, assistant supervisor of general services for Convair, said the machines are especially advantageous for transmitting material that does not lend itself to teletype, such as forms, tables of figures and documents that include charts, graphs or diagrams.

The Telecopier scans the document and transmits audible signals over regular telephone lines. When receiving, it transfers the audible signals into a copy of the original on special Telecopy paper.

An operator at one of the division's teletype rooms phones one of the other locations before sending material and phone receivers at both locations are placed in cradles called Telecouplers attached to the copy machines.

The machines take six minutes to transmit or receive a full 8½ by 11-inch page with shorter messages taking proportionately less time.

Waller said Corporate Headquarters in New York also is obtaining one of the machines and other divisions are studying feasibility of their use.

Want to See Europe? Tours Considered

A 22-day tour of Europe in October will be arranged through CRA if interest of General Dynamics employes warrants.

Two prospective travel itineraries are planned. One, with air travel between cities, would cost $859 per person. The other, with motor coach travel, would run $795.

Either would have an Oct. 4 departure date.

Interested employes should phone an employe services outlet and leave name, mailing address and plant phone extension.

GD Men to Serve Ordnance Society

Three General Dynamics employes and a Defense Contract Administration Services (DCAS) plant representative's office employe at Convair this month were installed as officers of the San Diego Chapter of the American Ordnance Association.

George Swanson of DCAS is Chapter secretary and I. J. Fansler of Convair's Dept. 988-8 is assistant secretary. R. R. Wahler of Convair Dept. 532-0 and J. C. Stowers, manager of division services for General Atomic division, are directors.

Magnuson Speaker At 'ZD' Ceremonies

W. E. Magnuson, chief of reliability control for Convair, was guest speaker at two Defense Contract Administration Services "Zero Defects" program "kick-off" ceremonies Feb. 8.

One was at the DCAS Region headquarters in Los Angeles and the other for employes at DCAS offices in Van Nuys, Calif.

PRINTING BY PHONE—Merle Fullerton, administrative clerk in teletype room at Convair's Kearny Mesa plant, demonstrates use of new Telecopier machine that transmits printed material by telephone lines. Similar machines are in use at Lindbergh Field, Vandenberg AFB and Los Angeles Material Office.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111, Kearny Mesa. Deadline for next issue of GD/NEWS is Feb. 28. Call ext. 1071 LF or 3322 KM.)

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ARCHERY — Meeting tomorrow, Feb. 23, 7:30 p.m., Room A, CRA Clubhouse.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BONAIR FLYERS—Meeting March 7, 7:30 p.m. CRA Clubhouse.

BRIDGE — Play each Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS — Play Wednesdays, 7:30 p.m., CRA Clubhouse.

CONVAIRIDERS — Ride to Oceanside and back Saturday, Feb. 25. Meet at La Jolla Country Day School at 8 a.m.

FENCING — Workouts and instruction Fridays, 7:30 - 10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB — Overnight fishing derby March 11 - 12 at Lake Jennings.

GARDEN CLUB — Meeting March 1, 7:30 p.m., Floral Association Bldg., Balboa Park.

ICE SKATING — GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

JUNIOR RIFLEERS — Shoot March 4, 1 p.m., Gillespie Field Range.

PISTOL CLUB — Club shoot Feb. 26, 9:15 a.m., SD Police Range, Federal Blvd. and Home Ave.

RADIO CLUB—Meeting March 2, 7:30 p.m., CRA headquarters.

ROCKHOUNDS — Field trip Feb. 25-26 to Swansee area near Quartzsite, Ariz.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB — Two-week trip to Sun Valley, Feb. 24-March 12. Water skiing Saturday mornings, Mission Bay. Meeting March 7, 8 p.m., Catamaran Hotel, Mission Blvd.

SQUARE DANCING — Beginners class open Feb. 28, March 7, 14, 8-10 p.m., CRA Clubhouse. Call Roland Hagar, ext. 1954 KM.

SPORTS CAR CLUB — Meeting March 8, 7:30 p.m., Convair executive dining room, Lindbergh Field.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamics Toastmasters No. 457, 5:15 Thursdays, both at CRA Clubhouse.

TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

TRAILERS — Travelers meet March 7, 7:30 p.m., CRA Clubhouse. Road Runners meet March 23, 7:30 p.m., Gillespie Field Clubhouse.

WOMEN'S GOLF — Tourney March 11, Singing Hills course.

VOLLEYBALL—Team rosters for CRA shop league due by March 15 to Pete Beyrer, ext. 1111 KM.

GIRL GOLFERS WIN VARIETY OF PRIZES

Trophy winners at the Feb. 11 tournament of the GD Women's Golf Club were Freda Magargal, Flight A; Barbara Bugbee, Flight B; and Edith Mellett, Flight C.

The full day of tourney play and prizes drew 38 to the River Valley course.

Runners-up in the tournament, played on the nine odd-numbered holes, were Flight A—May Dean Schell and Doris French; Flight B — Jean Hawthorne and Nell Bartlett; Flight C—Betty Jackson and Doris Parker.

Prizes went to the three low scorers over the 18-hole course: Iris Oster, Nell Bartlett, and Betty Jackson.

Iris Oster, Barbara Bugbee and Betty Jackson also won awards for low putt scores.

Mary Ransom and Jo Ann Kranz landed their balls closest to No. 6 hole. May Jean Schell, Ora Carpenter and Wanda Rose had the longest drives, in that order, on No. 3. High gross scores were held by Vi Hurst, Charlotte Young, and Evelyn Van Dusen.

Next monthly play will be March 11 at Singing Hills west course. Tee-off time will be 10:30 a.m.

Drama Group Chooses 'School For Scandal'

Triangle Players, the Convair drama group, has selected David Gregson as director for its first production of the '67 season — Sheridan's classic comedy "School for Scandal."

Gregson holds an M.A. degree in theater arts and formerly studied drama in England under a special grant. "School for Scandal" will be his first in San Diego.

Tryouts will be held in CRA Clubhouse at 7:30 p.m. tomorrow and Friday (Feb. 23 and 24) and at 1 p.m. Saturday and Sunday (Feb. 25 and 26).

Convair Men Active In Soaring Meet

Glider enthusiasts are prepping for the 21st Annual Mid-Winter Soaring Championships Feb. 25 and 26 at Torrey Pines Gliderport.

Jim Spurgeon of Convair will be master of ceremonies. Other Convair men include Walt Mooney, Gene Whigham, Sterling Starr.

MASTER POINT WINNERS NAMED

Winners of CRA Bridge Club's monthly master point play Feb. 10 were Jack Stanger and Harmon Johnson, North-South; Charles and Vivian Thomas, East-West.

Games are held at 7:30 p.m. Fridays in CRA Clubhouse. New players are welcome.

Beginner Sq. Dance Series to Start

First of 20 to 22 weekly square dance lessons for beginners will be conducted from 8 to 10 p.m. Tuesday (Feb. 28) in CRA Clubhouse auditorium at Kearny Mesa under auspices of CRA Square Dance Club.

Instruction will be by Dotty and Van Vander Walker, club callers, and cost will be 50 cents per person per week. Roland Hagar, president, said the course is planned for those who have never square danced or completed a beginners course. Enrollment will be open during the first three class sessions.

Graduation "ceremonies" for 24 persons who completed the club's last novice instruction course were held last night.

Additional information about the club and the new classes for beginners can be obtained by calling Hagar at KM ext. 1954.

Slippery Dept. 550 Slides to Victory

A game of ice hockey—played the hard way, with players wearing tennis shoes!—was the latest test of "skill" in the long-standing athletic feud between Depts. 963 and 550.

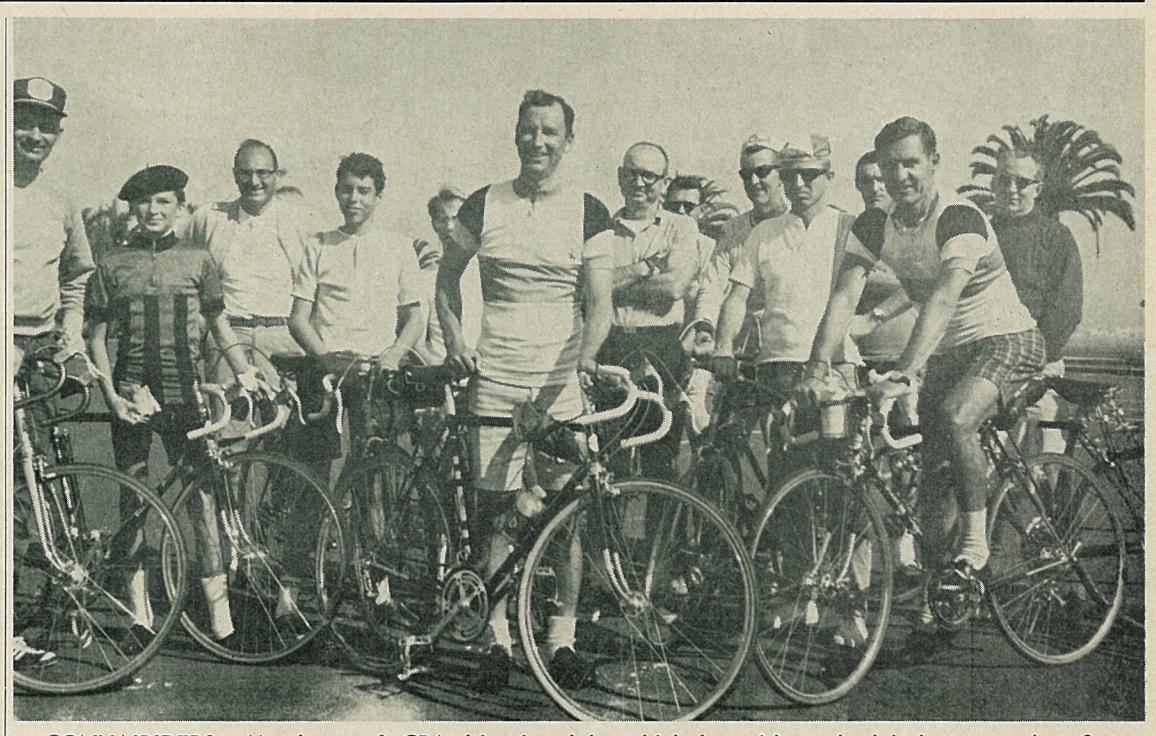
It was a slippery match at Mission Valley Ice Arena before a partisan crowd of 200, with Dept. 550 winning 6-3 and retaining the trophy that has changed hands many times during competition that has included table tennis, badminton, volleyball, etc.

Next contest? Boxing gloves at 30 paces.

SCOTTY PAYNE ELECTED BY CONVAIR RIDING CLUB

Scotty Payne will head the CRA Riding Club as president during the coming club term, beginning in April.

Also elected were Clyde Donahoo, vice president; Al Maillet, secretary; and Adelaine Donahoo, treasurer.



CONVAIRIDERS—Members of CRA bicycle club, which has rides scheduled every other Saturday, are shown after completing recent cycle tour to international border. Joe Olander, club chairman, center, and Cy Campbell, right foreground, received first club jerseys for completing 200 miles on club-sponsored rides.

Seventy Compete in Annual CRA Winter Tennis Tournament

Three sets of courts had to be reserved to take care of the 70 contestants in the CRA Winter Tennis Touraments over the weekends of Jan. 28-29, Feb. 4-5, and Feb. 11.

Matches were played at Morley Field, Mesa College, and CRA courts at Kearny Mesa.

Dave Bennett, son of Ruth Bennett, Dept. 832-1, defeated Cecil Norwood (Dept. 967-4), 6-2, 6-2, to top the advanced men's singles division. Erhard Rothe (Dept. 596-0) won over Bob Herold (Dept. 144-1), 6-2, 7-5 for the consolation trophy.

Advanced men's doubles was won by Stan Griffin (Dept. 508-0) and Dennis Sealey (Dept. 587-1) who defeated Dave Bennett and Bob Herold in a round robin.

Bill Connor (Dept. 845-3) won the intermediate men's singles over Barry Farwell (GD rep), 6-1, 4-6, 6-3. Bob Simons (Dept. 966-4) defeated Jim Doherty (Dept. 834-2) for the runner-up trophy.

Connor and Dave Gorham (Dept. 491-0) teamed to take intermediate men's doubles from Mike Griggs (Dept. 596-0) and Dale Richardson (Dept. 966-7), 6-4, 4-6, 6-3. Don McClarren (Dept. 565-1) and Rick Norwood, son of Cecil Norwood, defeated Dick Mostowy (Dept. 512-2) and Dick Bjelland (Dept. 526-6), 9-7, 6-3, for the consolation trophy.

Men's singles title went to Dick Mostowy who won over Mike Jobe, son of Jim Jobe (Dept. 830-0), 6-2, 6-3. Ernie Walley (Dept. 834-1) won the runner-up trophy by default from Don Moffat (Dept. 542-0).

Men's novice doubles were won by Mike Joe and Ernie Walley over Martin Rhee (6859) and Clyde Blevins (Dept. 125-0) in a round robin.

Women's singles was won by Vicki Jensen, 10-yr.-old daughter of Hank Jensen (Dept. 401-2), who defeated Frances Cannau, daughter of John Cannau (Dept. 966-4) in a round robin.

Debi Story, daughter of Hal Story (Dept. 142-0), won the women's beginners singles by defeating Elsie Jobe, daughter of Jim Jobe, in a round-robin playoff.

Mixed doubles was won by John Cannau and daughter Fran who won over Dennis and Hilda Sealey in a round robin.

Competition Continues Close In CRA Basketball Leagues

Underbrush continued undefeated in CRA fast-break basketball league play by squeezing by Flight Control, 39-37, and drubbing Cosmo Bums, 55-24, in games early this month.

In other contests, Hot Shots edged Centaur, 28-25 and R & E routed Cosmo Bums, 64-42. R & E then defeated Centaur, 38-29, and Flight Control eked out a win over Hot Shots, 52-50.

Slow-break league games late last month closed with Gyros with a one point edge over Plastics, 24-23, Bean Counters topping L.F. Jets, 24-21, and Bullet Biters outscoring Stromberg-Carlson, 18-16.

Also winning were Bullet Biters over Bean Counters, 20-16, Gyros over L.F. Jets, 2-0, and Stromberg-Carlson over Plastics, 31-18.

Scoreboard finals later gave Bullet Biters a 2-0 win over L.F. Jets, Stromberg-Carlson a 11-8 edge over Gyros and Plastics a 37-24 victory over Bean Counters.

Final slow-break league games for the season will be played tomorrow evening (Feb. 23) on Court 3 at Municipal Gymnasium, Balboa Park. Stromberg-Carlson cagers take on L.F. Jets at 6:30 p.m., Bullet Biters and Plastics vie at 7:40 and Gyros and Bean Counters take over the hardwood at 8:50.

First and second half season winners in each of the two leagues will meet in play-off games to determine plant championships.

Volleyball League To Begin in April

A CRA intra-mural shop volleyball league will start play the first of April. In addition to the usual men's league, both a women's and a mixed league will be formed if enough teams are entered, Pete Beyrer of CRA said. All team rosters must be turned into Beyrer, ext. 1111 KM, by March 15.

Adult High Offers Courses in Aviation

Pilots, or those heading toward their private pilot licenses, may still enter ground courses now being held at Midway Adult High School, 3249 Fordham St., Glen Hemphill, CRA Commissioner of the Bonair Flyers, said.

An instrument ground course is held Wednesday evenings, 6:30 to 9:30 p.m. and a basic ground course, Thursdays, 6:30-9:30 p.m. Only charge for either course is $5 per person.

Courses will be taught during the second semester by SD City College instructors.

The pilot ground training was initiated a year ago through efforts of Hemphill and the CRA flying group.

Second Bus Ordered For Las Vegas Trip

One bus has already been filled and reservations are being taken now for a second busload to make the weekend trip to Las Vegas March 10-12.

Reservations will be accepted until March 6 at all CRA outlets, Stromberg-Carlson and Electronics employe services. Price is $34.50 for transportation, double room occupancy, Saturday lunch and dinner, show. Single room package price is $44.50

Call ext. 1111 KM for full details.

Bill Spann to Head CRA's Garden Club

Young Bill Spann, perennial winner in CRA flower shows, will head the Convair Garden Club as president.

His mother, Helen Spann, of Dept. 964-2, will serve as secretary. Earl McDaniels, Dept. 400-1, is new vice president.

Officers will be seated at the March 1 meeting, 7:30 p.m., in the Floral Association Bldg., Balboa Park. A slide showing will be presented during the evening.

Convairiders Slate Trip to Oceanside

Convairiders with 10-speed bikes will make a 50-mile round-trip ride to Oceanside Saturday (Feb. 25). The group will leave at 8 a.m. from La Jolla Country Day School, one mile east of old Highway 101 on Miramar Road.

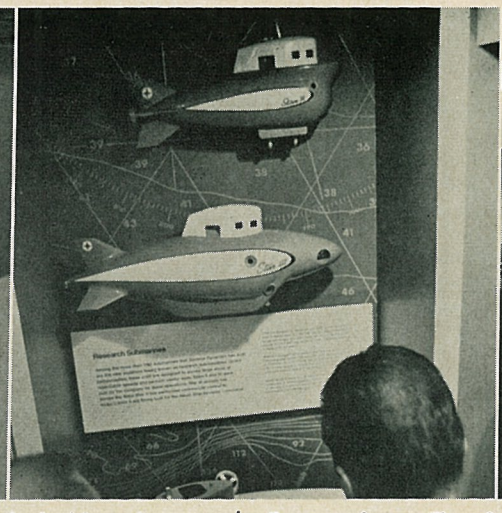
Additional information can be obtained from Al Brown, ride leader, home phone 273-9802.

Golfers Must Hurry To Sign For Tourney

Convair Management Club golfers have only a couple of days left to sign for the annual Spring Tournament to be held in March at the Circle R Golf Club near Escondido.

Entries must be in by this Friday, Feb. 24, to either Jack Nichols, Zone 964-20 KM, or Terry Kell, Zone 423-00 LF.

The tourney will be the weekend of March 4-5. Entry fees, including green fees, for club members are $5; guests, $6. Bob Thomas, pro at Circle R, will hold a golf clinic at 2 p.m. on both days of the tournament.



CAPITAL BRIEFINGS—General Dynamics played prominent role in Navy League Exposition and Symposium in Washington, D.C. this month, with exhibits and briefings for distinguished visitors. At left, Navy Secretary Paul H. Nitze, left, discusses F-111B with Rep. L. Mendel Rivers, chairman, House Armed Services Committee. In photo at right is Gen. Wallace M. Greene Jr., Commandant, U.S. Marine Corps. Center photo: Electric Boat research submarine exhibit. More than 3,000 attended Exposition, including top Government and military officials, during three-day affair. F-111B briefings were "standing room only" but 900 were accommodated in 45 different sessions. Actual F-111 crew module was on display and drew close attention.

SUPPORTER—Gen. Wallace M. Greene Jr., Commandant, U.S. Marine Corps, chats with C. N. McCauley of Fort Worth division during Navy League Exposition and Symposium this month in Washington, D.C. In background is Quincy division exhibit featuring Apollo Instrumentation Ships. Gen. Greene, as luncheon speaker, strongly supported Fast Deployment Logistics Ships program.

FDL Concept Supported By Marine Commandant

Gen. Wallace M. Greene Jr., U. S. Marine Corps Commandant, chose the Navy League's Tenth Annual Seapower Symposium in Washington, D.C., to state his service's full support of the Navy's FDL (Fast Deployment Logistic Ships) program.

"I like it," General Greene said at a Sheraton Park Hotel luncheon honoring him Feb. 10.

"These ships are new in concept, they are new in design and they are new in construction techniques.

"They, and the entire project," he continued, "were developed by the Navy with the active support of the Army and the Department of Defense.

"It calls for the placing of Army equipment aboard these special ships of the Navy—where the equipment could be kept in a controlled atmosphere for years with minimum maintenance. The FDLs would be strategically mobile over 71 per cent of the earth's surface. And the troops to man the equipment would be flown to join up at some friendly environment."

General Greene also outlined some of the FDLs special capabilities:

"Twice the capacity of any current Navy cargo ship; half again the speed of today's logistic ships; 'roll on' and 'roll off' facilities for vehicles and cargo; only six required to transport the equipment of an entire Army division; fractions of our present unloading time.

"Again," General Greene stressed, "I like this concept. I should. It features many things that we Marines have talked about—and fought for—over the years."

General Greene then asked the rhetorical question:

"Does this mean that the concept pre-empts the requirement for Marines? Definitely not."

To explain why, he returned to the phrase "friendly environment" and explained that securing it was a job for the Marines.

"Yes, I am enthusiastic about the FDL concept," he concluded. "For it means the more rapid and efficient projection of seapower ashore . . . and that can only mean a greater, a more secure United States."

Antennas in Space

'Unlimited' Education Possibilities Seen For World-Wide Television

Convair division engineers are conducting a Company-funded feasibility study on use of large antenna "satellites" at synchronous orbit altitude for relay of commercial and educational television programs to large areas of the earth's surface.

The large antennas could be kept "on station" 22,300 miles above the earth for several years.

John Fager, project engineer, said several types of antennas and power systems, with "payload weight" ranging from 590 to 68,000 pounds, are being evaluated.

Booster systems being considered are Atlas-Centaur, Atlas-Centaur-Burner 2, Titan 3C, Titan 3C-Centaur and Saturn 5. Power systems under study range from the SNAP-2 nuclear reactor to solar cells.

A 150-foot-diameter parabaloid antenna at synchronous altitude could provide television relay for the San Diego-Los Angeles area and, with higher power, a 22 by 30-foot antenna could serve a complete U. S. time zone.

Fager said use of bilingual TV satellite systems can provide "unlimited possibilities" for education of millions by television in countries such as India and Africa and in remote areas such as in several South American countries.

Relatively inexpensive single-channel, battery-powered TV receivers could be provided at numerous "school" locations throughout the area, or country being served. Sound reception would be in the language or dialect of that area.

Antenna satellites serving the United States might carry as many as 14 television channels with most of the cost being underwritten by commercial networks but with several channels being allocated to educational telecasting.

Television relay from such satellites could be beamed directly to individual home TV sets, to community distribution centers or to local television stations for rebroadcast.

Transmission power requirements would vary considerably, depending upon type of receiver being used. About 10 times as much power would be required, for example, for direct home TV reception as for reception by a distribution center with a 60-foot receiving "dish."

Fager said the Ford Foundation and NASA are among a number of organizations and governmental agencies with a special interest in television relay by satellite.

NASA's Lewis Research Center early this month announced a request for proposals for a study of 2,000 to 6,000-pound satellites for launch to synchronous orbit by Atlas, Titan or uprated Saturn families of launch vehicles.

The study will consider use of four audio and one video channel. The audio channels, could be used for multilingual sound transmission or for separate radio broadcasts.

Convair recently completed a one-year study for NASA's Marshall Space Flight Center on feasibility of self-expandable and astronaut-erected space antennas. These, designed to be boosted into space in Project Apollo flights, would be packaged within the Apollo's Lunar Excursion Module. After being expanded in space, they would rotate to "track" a fixed target on the earth.

Several types of antennas were studied, including Convair's expandable-truss concept which makes expansion ratios of as much as 20 to 1 feasible.

A final report on the study is tentatively scheduled to be given next week in Huntsville, Ala.

Convair currently is working on three other related study contracts—one on manmade radio frequency radiation measurement and one on large space structure experiments for NASA and one on space-erectable lightweight metallic structures for the Air Force.

In addition to Fager, key personnel working on the studies and their areas of responsibility include:

Desmond H. Vaughan, design; Hayden A. Mitchell, dynamics; Raymond Garriott and Christopher Hatchett, radio frequency and antenna design; H. D. Neubert, structural design; Benjamin A. Penners, television electrical systems; Patrick A. Bergin, electrical power; H. B. Sturtevant, reliability; John R. Hunter, large space structures; and Benjamin Weinbaum and Herbert K. Mertel, radio frequency radiation measurements.

Coin To Be Struck For 25th Birthday

Entry of W. E. Johnson of Dept. 059-0 was chosen as winning design for the commemorative coin to be struck in observance of Convair Management Club's 25th anniversary, June 8 of this year.

One side bears the original name of the club, Consolidated Foremen's Club; year of formation, 1942; and outline of a B-24, principal product at that time.

The reverse side marks the occasion — 25th anniversary, with present club name and year.

Is it news? Pick up a phone and call GD/NEWS

'Fantastic Accuracy' Marks Launch Of Lunar Orbiter Spacecraft 3

America's Lunar Orbiter 3 spacecraft is photographing 12 primary and 32 secondary "targets" on the lunar surface after being launched early this month by Convair's Atlas SLV-3 No. 5803 with what officials termed "fantastic accuracy."

After being boosted by the Atlas, the Orbiter was launched into lunar trajectory by two burns of an Agena D second-stage vehicle. Cameras aboard the spacecraft are to expose 212 photographic frames during 50 orbits. NASA will use them to select Apollo astronaut landing sites.

Jim Von der Wische, Convair program manager for NASA SLV-3 programs, said the Atlas countdown was "routine" and the launch, with liftoff one second into the launch "window," was "nominal in all respects."

The spacecraft, which was "locked on" to the sun and the star Canopus for navigational reference during its quarter-million-mile coast through space, would have passed within 49 miles of the lunar surface without midcourse correction.

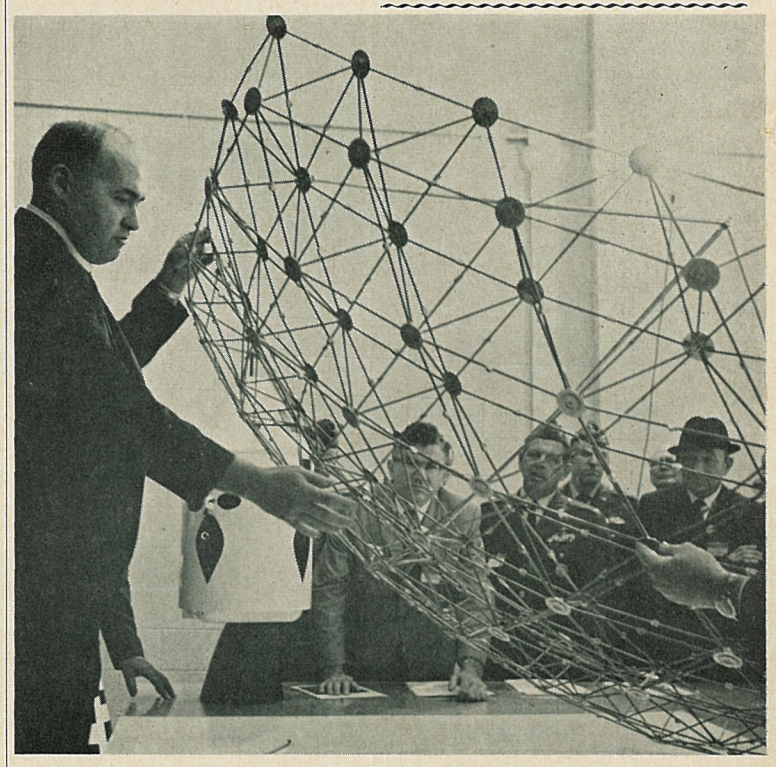
The correction and de-boost maneuver were carried out, however, to slow the spacecraft and change its trajectory to put it in a more desirable position.

Von der Wische said Lunar Orbiter 3 could complete overall mapping of Apollo landing sites if success of its photographic mission equals that of the two previous Orbiters. This could enable the last two spacecraft in the series to photograph selected areas of key scientific interest.

Lunar Orbiter 1 alone photographed about two million square miles of the lunar surface during its 77 days in orbit. Lunar Orbiter 2 is still orbiting the moon but its transponder has been turned off to eliminate possibility of telemetry signal interference.

Convair had a product review team at Cape Kennedy last month for a flight readiness review of the Atlas booster for the Orbiter launch.

J. W. Ball of test operations Dept. 969-0 was captain. Others included C. C. Campbell, 958-4; Kenneth Catlin, 967-3; G. D. Clapp, 962-5; F. L. Cook, 963-8; H. E. Harper, 551-2; H. E. La Nois, 962-3; L. R. Lisak, 988-7; R. H. Nicholson, 956-0; J. F. Prescott, 962-2; R. S. Stevens, 962-1 and C. R. Cearley, 963-6.



SPACE ANTENNA—Model of Convair expandable-truss antenna that could be used in space for radio and television relay is displayed by John Fager, Dept. 512-2. Large detractable antennas of this type also may have future application on ships.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 5 | GENERAL DYNAMICS NEWS | Wednesday, March 8, 1967

Secretary of Treasury Commends Bond Buyers

Following is the text of a letter from Secretary of the Treasury Henry H. Fowler to Roger Lewis, president of General Dynamics:

"You must be very pleased, as indeed I am, with the outstanding results of your 1966 Payroll Savings campaign. You and the employes of General Dynamics made a major contribution to the success of the U.S. Industrial Payroll Savings Committee and to the Savings Bonds record of the business community.

"The enrollment of 20,208 new savers to bring General Dynamics to a record high of more than 50,000 employes saving systematically . . . (with) E Bonds is an outstanding achievement. It benefits our Nation as well as the individual employe and his family. It is an important help to the work of maintaining the value of the dollar, the basis of our economic system.

"You have provided an inspiring example for all business and industry of what can be accomplished by strong patriotic leadership and thorough organization.

"Please accept my thanks and congratulations, and convey them to the members of your Bond campaign team and to all the men and women of General Dynamics."

More Fuel Tank Kits Ordered For TF/F-102s

Convair division has received a follow-on order for another 1,037 external fuel tank modification kits for Air Force TF/F-102 aircraft.

Value of the order is estimated by San Antonio Air Materiel Area, Kelly AFB, Texas, contracting agency, to be in the neighborhood of $240,000. The spare tank kit "E" consists of all contractor and government furnished parts and materials required to modify the F-102 spare tank and pylon assembly for installation of redesigned external fuel tank and pylon assembly.

The current order will carry production of the "E" kits into late this year. First order of 2,188 will be off the line in July when first of the follow-on number will be phased into production to keep the completion rate at 225 a month.

F-102 modification kits are being produced at Convair's Lindbergh Field plant.

$3.5 Million Increment Covers Test Services

Convair division has received a $3.5 million increment from a $7 million contract from NASA's Lewis Research Center for launch and combined systems testing services for Atlas-Centaur vehicles.

J. H. Edwards, Convair chief of launch vehicle contracts for NASA programs, said the increment covers launch of Atlas-Centaur 12 from the Eastern Test Range and combined systems testing for Atlas-Centaur 11 and Atlas-Centaur 13 vehicles.

Surveyor spacecraft will be launched by each of the three Atlas-Centaur vehicle combinations. AC-11 will have a direct ascent mission. AC-12 and AC-13 missions each will include a "parking orbit" coast in space before second burn of the Centaur engines.

Club Will Hear John Sargent

John A. Sargent, General Dynamics vice president of finance, will outline Corporate future planning to members and guests of the Convair Management Club at the March 23 dinner meeting.

John Sargent

The meeting will be held in the H. M. S. Bounty Room of the Hilton Inn on Highway 101. Social hour begins at 5:30 p.m., followed by prime rib dinner at 6:30 and program at 7:30.

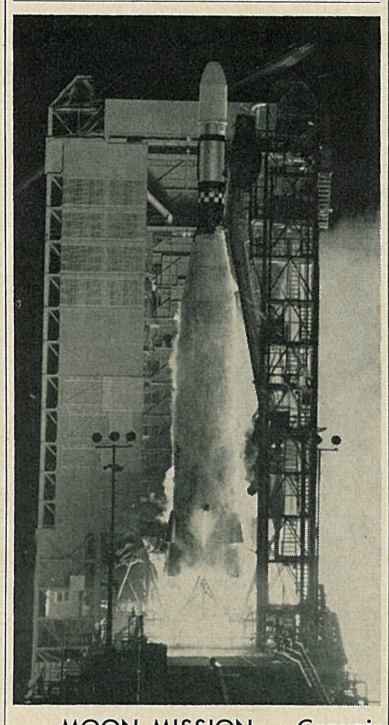
Controller's departments under John D. Milling are sponsoring the "Corporate Night" session.

Door prize will be a free weekend for two at a well-known resort and there will be valuable raffle prizes.

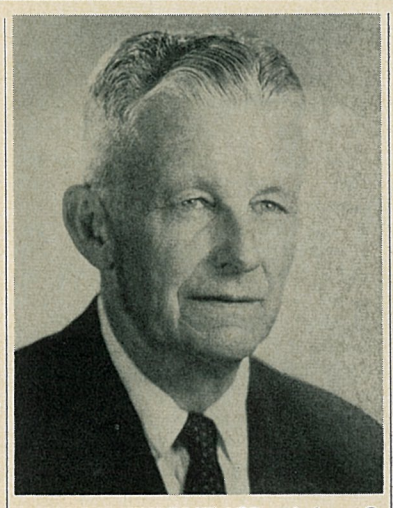
Tickets at $3.75 each are on sale now by Management Club Boosters at all plant locations.

Hurlich Chairs AIME Session

Abe Hurlich, Convair manager of materials and processes, was chairman of the session on metal fatigue at the 96th annual meeting of the Metallurgical Society of the American Institute of Mining Engineers in Los Angeles Feb. 19-23.



MOON MISSION — Convair division's Atlas SLV-3 No. 5803 starts Lunar Orbiter 3 spacecraft on its way to photograph possible Apollo astronaut landing sites on moon. Project officials have called quality of photos made by the spacecraft's cameras "extremely good."



WIDE EXPERIENCE—John C. Franklin has been named vice president-corporate development of General Dynamics.

John Franklin Appointed GD Vice President

John C. Franklin has been appointed vice president—corporate development of General Dynamics Corporation, Roger Lewis, president, announced last week.

Franklin has had more than 35 years of experience in the airline and chemical industries, government service and investment banking.

He joined Trans World Airlines as a radio engineer in 1930 and rose to the position of vice president for engineering and maintenance. He joined the U.S. Atomic Energy Commission in 1947, and was manager of its Oak Ridge operations until 1949.

He became vice president and director of General Aniline & Film Corp. in 1950, and was assistant group executive of Bendix Aviation Corp. from 1956 to 1957. Before joining General Dynamics, Franklin had been a general partner in Lazard Freres & Co. since 1958 .

A native of Palo Alto, Calif., Franklin received a bachelor's degree in physics from Stanford University in 1926 and a master's degree in business administration from Harvard University in 1929.

Mfg. Depts At KM Merge

Convair division operations factory fabrication departments were merged with launch vehicle programs-manufacturing operations last month to form a new department—fabrication, assembly and checkout, Dept. 700-0, reporting to R. G. Daly, factory manager.

Daly reports to E. D. Bryant, vice president-operations. R. A. Clark was appointed superintendent of assembly and checkout, Dept. 760-0, reporting to Daly.

Logistics activities within the Kearny Mesa plant operations were consolidated into a single logistics and requirements function. L. W. Kerner was appointed chief of logistics support, Dept. 831-0, reporting to F. D. Robbins, manager of production control.

J. P. Hopman, formerly fabrication and assembly Kearny Mesa plant factory manager, was appointed assistant to Bryant to assist in development and implementation of plans and programs.

Next Salvage Sales April 1, Lindbergh

Next sales day at the Lindbergh Field salvage yard will be April 1. Hours are from 8 a.m. until noon. All General Dynamics people are admitted upon presentation of ID cards.

BUILT FOR BULK—Large fixtures for C-5 horizontal stabilizer skin panels under construction in Convair production area at Lindbergh Field plant are 40 ft. long, 20 ft. wide, and 15 ft. high; weigh 10,000 lbs. G. E. Hope, welder in jigs and fixtures, works on one of two large fixtures which stand side by side in central bay area of Bldg. 2.

Massive Fixtures For C-5 In Work

The C-5 production area at Convair's Lindbergh Field plant is filling fast with the near 100 fixtures which will be used for assembly of horizontal and vertical stabilizers for the giant Air Force C-5 cargo plane.

The C-5 work is under contract from Lockheed-Georgia Co., prime contractor.

The massive iron structures being erected in Bldg. 2 are some of the largest fixtures ever used at Convair in construction of any plane. The fuselage buck for the XC99, cargo version of the B-36, some 20 years ago and fixtures for the R3Y turboprop seaplane transport in the early 1950s were the only ones that can compare in size.

The C-5A version will be 243 feet long with a wing span of 223 feet. The tail's horizontal stabilizer will stand 63 feet above the ground and will span 68½ feet.

Vertical stabilizer fixtures will occupy the west side of the center bay throughout the entire length of Bldg. 2 while horizontal fixtures will be located down the east side of the center bay.

Basic structures are now nearly finished with the fixtures to be completed between mid-April and early May.

Largest of all is the structural fixture for the vertical stabilizer which measures 50 ft. long, 26 ft. wide, and 22 ft. high.

Major vertical stabilizer tools are the skin panel fixtures for subassembly of left and right-hand skin planks and rib assemblies. These huge subassemblies, together with front and rear beam assemblies and main pivot fitting, are then positioned and assembled together in the vertical stabilizer structural fixture.

Other large vertical stabilizer assembly tools include the rudder fixture for assembly of upper and lower rudder sections. This tool will position pre-assembled leading and trailing edges of the rudder and the interior ribs during installation of external skins.

(Continued on Page 2)

PREPARE FOR FLIGHT—From left, Convair's J. S. Boaz of contracts; Wayne Eddington, field service representative; R. T. LeVine, pilot; Bill Campbell, Pacific Western Airlines pilot; Howard Auten, Convair pilot, just before take-off early last week of first Convair 640 for Vancouver, B.C., base of Canadian line. Two more 640s will be delivered this month and a fourth in April.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between March 1 and March 15.

Thirty-year: Dept. 512, J. J. Szakacs. Twenty-five-year: Dept. 027, G. G. Ramos; Dept. 031, G. F. Roberts; Dept. 041, M. C. Tracy; Dept. 057, O. C. Bradshaw; Dept. 115, A. H. Gross; Dept. 131, H. A. Beyrer; Dept. 250, T. E. Moore, E. A. Norden; Dept. 300, G. C. Walsh; Dept. 400, H. W. Moreno, E. J. Penner; Dept. 420, J. G. Sewell; Dept. 451, J. E. Casner; Dept. 543, S. C. Danos; Dept. 566, L. A. Burnett; Dept. 744, W. J. Cushman; Dept. 833, Virginia T. Cannon; Dept. 964, K. E. O'Neil; Dept. 985, B. E. Shultz.

Twenty-year: Dept. 002, V. A. Talbot; Dept. 031, L. Davis; Dept. 059, A. W. Fraser; Dept. 101, G. Olcott; Dept. 149, M. M. Hagata; Dept. 170, Margaret S. Smith; Dept. 574, E. F. Kosen; Dept. 733, Juanita F. Johnson, Gretta T. Smith; Dept. 756, Lauren T. Zink; Dept. 780, J. D. Roper; Dept. 835, J. C. Fox; Dept. 964, D. E. Mansfield.

Fifteen-year: Dept. 015, M. B. Romero; Dept. 020, R. O. Encinas; Dept. 059, G. L. Chavez; Dept. 130, W. M. Hosman, Belva Jacobs; Dept. 142, W. C. Oliver, A. J. Woodington; Dept. 144, H. V. Wilder; Dept. 145, E. R. Zevin Jr.; Dept. 170, J. A. Hicks, J. E. Tyler; Dept. 250, F. A. Baker, O. Griffin; Dept. 300, J .W. Clark, L. F. Lau; Dept. 400, R. F. Schweitzer; Dept. 401, F. J. Goerner, A. T. Montano Jr.; Dept. 403, C. G. Kickbush Jr.; Dept. 454, V. L. McKerrihan; Dept. 460, A. D. Godfrey; Dept. 509, R. E. Malm; Dept. 511, B. Worsham; Dept. 572, H. M. Urbach; Dept. 584, R. J. Reich; Dept. 756, B. M. Kellar, V. H. Lowe; Dept. 758, O. A. Smith; Dept. 780, V. C. Carriker, E. J. Russell; Dept. 832, Evelyn L. Ives, Rosa M. Lujan; Dept. 820, Thelma O. Aubrey; Dept. 840, M. Gonzales; Dept. 954, J. H. Walk; Dept. 985, C. C. Blacksmith; F. T. Line; Dept. 987, L. E. McGhee; Dept. 988, O. Galba.

Ten-year: Dept. 027, S. Persley; Dept. 056, R. L. Wintringer Jr.; Dept. 057, J. W. Vockel; Dept. 101, A. H. Limbacher; Dept. 113, W. H. Saylor, J. E. Yonke; Dept. 115, M. B. Peck; Dept. 130, R. L. Craig, L. F. Lacy; Dept. 142, Lu Verne E. Johnson; Dept. 143, Beatrice H. Emeterio, V. F. Hirsch; Dept. 144, R. L. Williams; Dept. 145, R. W. Lessard; Dept. 170, Olena J. Oberdiear, T. Yano; Dept. 194, R. M. Naffke; Dept. 300, R. E. Cutchin; Dept. 400, Mary K. Smith; Dept. 508, W. K. Alexander; Dept. 517, G. Paul; Dept. 524, Hyacinth D. Montgomery; Dept. 551, D. E. Balk.

Dept. 553, J. C. Hungerford Jr.; Dept. 554, E. Herz; Dept. 565, J. F. Martini; Dept. 731, D. E. Golem; Dept. 780, J. M. Hazel Jr., Alice B. Jensen; Dept. 820, T. E. Barker Jr.; Dept. 832, Evelyn A. Zeller; Dept. 951, D. T. Kuczon; Dept. 957, M. Mondragon; Dept. 962, T. E. Butterfield Jr.; Dept. 964, J. D. Fitzpatrick, Ellen F. Hawks; Dept. 966, Sophia S. Skingel; Dept. 967, D. O. Linn; Dept. 969, E. B. Murphey; Dept. 971, Evelyn F. Toler; Dept. 972, E. Ruiz; Dept. 979, L. K. Arnold; Dept. 985, J. M. Belden.

Awards

CONVAIR

Employe Suggestions awards approved for the week ending Feb. 17.

Dept. 019-0, F. Malcangio; Dept. 027-0, G. R. Comfort, E. L. Krowl, C. L. McNeal (two awards), F. J. Serio; Dept. 031-0, A. V. Elo; Dept. 059-3, H. G. Easter Jr.; Dept. 130-2, O. O. Bowles; Dept. 143-3, M. S. Carson; Dept. 149-7, G. F. Wilson; Dept. 149-9, A. L. Spears; Dept. 250-1, A. C. Mitchum; Dept. 518-0, D. L. Dagley; Dept. 518-6, M. L. Campbell; Dept. 574-1, C. L. Hagen; Dept. 759-0, N. B. Byrd (three awards), E. W. Ford; G. D. Lundquist (three awards); Dept. 780-1, N. Moffett Jr., D. L Parnell; Dept. 833-1, J. C. Payne; Dept. 841-0, A. J. Seifert; Dept. 985-1, M. B. Stroud; Dept. 987-0, B. K. Gingery, P. E. Grasmick, W. L. McDougal, S. S. Stearns, C. E. Weber.

Employe Suggestion awards approved for the week ending Feb. 24.

Dept. 015-0, L. E. Voosen; Dept. 016-0, W. J. Gibson; Dept. 024-0, R. E. Cloud; Dept. 130-8, B. J. Jones; Dept. 144-2, H. M. Gallant, R. F. Luth; Dept. 146-4, D. M. Brown; Dept. 149-2, W. L. Bilbrey, L. B. Muzzy; Dept. 149-6, H. E. Salley; Dept. 250-1, A. A. Phillips; Dept. 250-2, B. A. Rusk; Dept. 717-0, D. P. Grace, V. Halmaghi; Dept. 759-0, B. F. Fuller, E. Gabbard, G. D. Lundquist; Dept. 820-0, W. P. Connor; Dept. 840-1, E. J. Ward; Dept. 957-0, R. E. Torrence; Dept. 979-3, J. H. Seymour; Dept. 985-6, M. G. Holleb; Dept. 987-0, J. V. Backstrom, W. A. Clark Jr., R. A. Jacobs, G. G. Shoop.

Retirements

CONVAIR

BLACKERBY—Gaines P., Dept. 143-4. Seniority date Feb. 12, 1957, retired Feb. 16.

CLAGETT—Viva G., Dept. 521-6. Seniority date July 31, 1961, retired Jan. 15.

DAVANT—Jack K., Dept. 403. Seniority date Sept. 8, 1942, retired Feb. 17.

MacLEAN—William E., Dept. 731-0. Seniority date Dec. 5, 1958, retired Jan. 31.

McLANE—Paul B., Dept. 818-2. Seniority date Feb. 1, 1956, retired Feb. 17.

SZALINSKI—Thomas A., Dept. 130-1. Seniority date Nov. 14, 1950, retired Feb. 20.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N.Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Personals

We wish to thank our Convair friends for their cards, flowers and expressions of sympathy after the death of our son, Dennis, from a Naval aviation accident.

Paul Dudney and family
Dept. 979-1, ETR

* * *

We would like to extend our many thanks to all the friends and co-workers of KM Bldg. 4 and Dept. 572 for their kindness, deep understanding and sympathy at the loss of our baby daughter, Monique Annette.

Louis J. Heyn
Dept. 572-4

* * *

We wish to express our deepest thanks to all of our Convair friends for the flowers, cards, and many acts of kindness received during the long illness and death of our husband and father, Ernest "Shorty" Shoemaker, formerly in Dept. 001, Lindbergh Field plant.

Mrs. Ernest Shoemaker and sons,
Larry and Randy

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Mondays, March 20 and April 3. Lindbergh Field, ext. 491, Bldg. 14 auditorium 8 a.m., Tuesday, March 21, for first shift; 4:30 p.m., Tuesday, March 28, for second shift.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931, Kearny Mesa.

Rider-Driver

CONVAIR

RIDE WANTED—From 1085 Camino del Rio, Mission Valley, to Kearny Mesa, 7 to 3:45 shift. Call Ann Raymond, ext. 2652 KM.

Lost & Found

LOST—Two rings left in women's rest room, Feb. 17, Bldg. 1, KM. One black and white pearl, one ornate. Call Jeannette Spoden, ext. 1813 KM.

AIAA to Honor Reuben Fleet

Reuben Fleet, founder of Consolidated Aircraft, will be honored at a testimonial dinner Tuesday, March 21, when the American Institute of Aeronautics and Astronautics and the San Diego Chamber of Commerce join in presenting "Reuben Fleet Night."

The special dinner meeting is in observance of Fleet's 80th birthday, March 6.

The event will be at El Cortez Hotel, starting with a social hour at 6:30 p.m., dinner at 7:30, and program at 8:30.

Phil M. Prophett, Convair director of aircraft sales and service and former chief test pilot and manager of flight, will be master of ceremonies. Other Convair men will be among Fleet's close associates, dating back to the founding of Consolidated Aircraft Corporation in 1923, who will recall anecdotes of his career. Highlights will be shown from the film, "Convair's Heritage."

The event is open to the public by reservations only. Call Miss Mary Condon at 297-2911 for dinner reservations.

C-5 Fixtures Now In Work

(Continued from Page 1)

Major horizontal stabilizer fixtures include the skin panel fixtures. They locate and hold lower and upper skin panels during subposition.

Mating of the upper and lower skin panels and pivot rib assemblies will be done in the horizontal stabilizer box assembly fixture.

The horizontal stabilizer mate fixture will align box assemblies relative to each other in flight position.

Inboard and outboard elevator fixtures position front beam subassemblies, ribs, and trailing edge assemblies for installation of outer skins.

The forward bullet assembly fixture prepares the forward bullet for mating to the horizontal stabilizer structure. Side panel skins and forward barrel section will be assembled in the fixture.

Tooling department at Lindbergh Field, under E. H. Damarus, chief, has total responsibility for design and construction of the C-5 fixtures.

Goal Progress Being Plotted

Convair departments and functions are plotting progress toward more than 700 meaningful goals in the division's Convair Craftsmanship program.

"We are gratified with the manner in which this proven method of management by objective is being used for improvement," W. E. Magnuson, Convair Craftsmanship program chairman, said.

"The objectives toward which progress was being plotted on wall charts last month by the departments represents a considerable increase from 154 on Sept. 1 and 422 on Jan. 1."

Number of goals by type included budgets, 27; methods, 40; training, 60; cost reduction, value engineering and employe suggestions, 92; schedules, 56; safety, 36; housekeeping, 25; engineering paper, 59; management techniques, 17; quality trends, 115; attendance, 36; conservation, 4; work measurement, 96; damage control, 7, and others, 33.

In addition to the departmental goal setting program, departments with previously measurable quality control data are striving for 20 per cent improvement over their performance last year.

Sustained performance award certificates will be presented in July to each department achieving the 20 per cent quality improvement during the first six months of the year.

Departmental achievement banners also will be awarded next month by each division staff member to one of his departments for outstanding performance during the first three months of the year.

NATIONAL HONORS — Ralph T. Bauman, right, receives certificate in recognition for service as National Management Association director from M. V. Wisdom, director of industrial relations for Convair.

NMA Honors Ralph Bauman

Ralph T. Bauman, assistant foreman in Convair division's engineering test support Dept. 756-0, has received a certificate from the National Management Association in recognition of service as a NMA national director from 1964 to 1967.

The citation noted Bauman's "personal contribution in reaching the NMA objectives of unity of management, development of leadership in management and public appreciation of management as a profession."

Bauman, Convair employe since 1940, served as president of the former Astronautics Management Club in 1963-64 and previously served as vice president, member of board of control and booster chairman.

George Miyashiro Sinks 188 yd. Shot

George Miyashiro of Dept. 146-1 sank his first hole-in-one in about 10 years of off-and-on golf on the 16th hole of Torrey Pines south course during a Sunday round Feb. 26. The hole is 188 yards long.

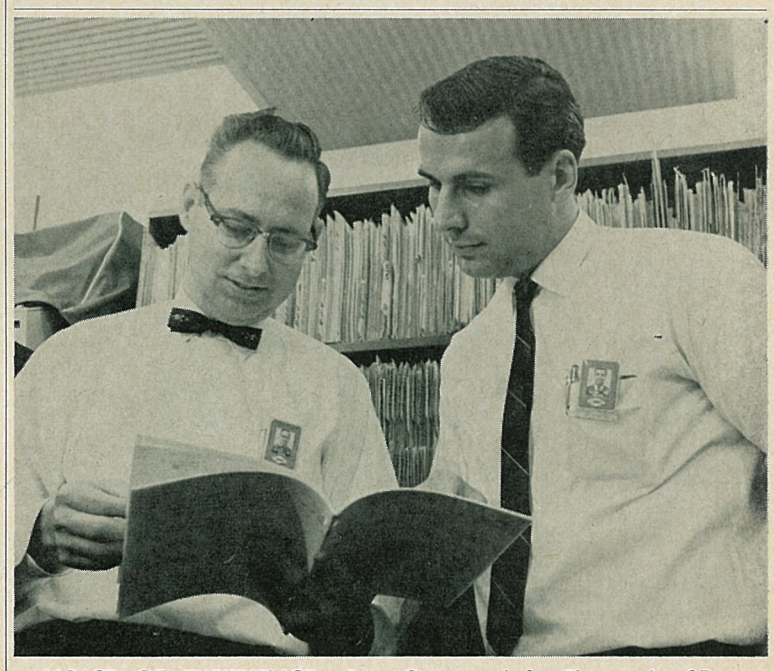
Bill Bussard (Dept. 146-4), playing with Miyashiro, witnessed the feat.

★ Did You Know? ★

(General Dynamics people enjoy numerous advantages and high on the list are those usually referred to as "employe benefits." There are many of them, each designed to complement the others and together form a balanced program for the welfare of the individual. As a reminder, GD/NEWS is carrying a series of brief articles touching upon first one benefit and then another. Some, perhaps, you may not have known existed.)

★ ★ ★

Convair, Electronics-SD and Stromberg-Carlson employes in San Diego who become totally disabled before age 60 (hourly) or 65 (salaried) receive monthly income payments from their group life insurance. Hourly employes becoming permanently and totally disabled receive a $2,500 lump sum payment six months after the last day worked and $100 per month until the full amount of their insurance has been used. Salaried employes with total disability after being insured more than a year have a monthly payment equal to $20.50 for each $1,000 of their insurance beginning the first day of the seventh month of disability. (Compensation during the first six months is from disability benefit and paid sick leave programs.) Life insurance premiums are waived for employes disabled more than six months. Complete details are available from employe services offices.



VOICE OF EXPERIENCE—Ray Grygar, left, Electronics-SD engineer, helps Phil Allen, associate engineer, search out technical data. Grygar is assigned to Allen as adviser under SD operations program to speed transition of recent graduates from college into industry.

Adviser System Proves Success In New Engineer Indoctrination

A personal advisory program at Electronics division's San Diego operations is speeding the transition of college graduates from campus to industry in the first orientation program of its kind within the General Dynamics family.

The program, which involves assigning a veteran engineer to each newcomer as an adviser, was inaugurated last June for ten young men joining the division as associate engineers.

Everyone concerned, from Manager Don Prim, who initiated the program, to engineering supervision, industrial relations, and the young men themselves, say that the orientation has more than proved its worth.

Typical of the ten is Phil Allen, who graduated last June from Rensselaer Polytechnic Institute, N.Y., with a degree in electrical engineering. Assigned to help him was Ray Grygar.

"Having Ray to guide me, especially during the first two or three months, has been invaluable," Allen said.

"When I came into the division, absolutely cold, I was constantly asking Ray questions — everything from where I could locate technical material and vendor information to names of reliable outlets for stereo equipment.

"Though I rarely have to bother him any more for directions to places or people, I often talk over a tough problem of work. His experience and knowledge help clarify my own thinking."

The camaraderie between the young engineers and their advisers after several months of close association is an added dividend.

Advisers' main duties are to provide guidance and answer questions on personnel policies, company benefits, educational opportunities, housing and living conditions, community activities and facilities, sources of technical data, societies and libraries, Management Club, church and civic groups, recreational programs, cultural events, Company facilities such as technician and clerical support, lab support and office services, tools, test equipment, parts, drafting supplies.

Advisers had to bone up on every facet of the Company and the SD facility.

"We are extremely pleased with the program so far," Prim said. "These associate engineers have made the transition much more rapidly and smoothly than any others we have hired."

James Crooks, engineering staff specialist, is adviser group chairman. George Leesch, manager of industrial relations, and Vince Finley, professional placement representative, have assisted in setting up the program.

Associate engineers, degrees and schools, and their advisers are: Philip W. Allen, BEE, Rensselaer Polytechnic Institute—Ray Grygar; Daniel J. Cockrum, BSME, California Polytechnic Institute—M. M. Reeder; Frank S. Carlo, BME, Rensselaer—Robert Grove; Warren W. Curtis, BSEE, Cal Poly—Leo Karel; Lewis W. Masters, BSME, University of Maryland—Ed Lou; Lester B. Ostroy, MSEE, Columbia University—John Silva; Robert E. Russell, BSEE, University of Illinois—W. S. Vick; Gordon D. Thiede, BSEE, University of Wisconsin—Lou DeBeer. Two, who joined Electronics-SD after graduation last January, are Joseph Seeman, BSEE, University of California—Mitz Ishihara; and Quentin Spangler, BS, mathematics, San Diego State—Humberto Yznaga.

Convair Engineer Will Address SAWE

Members of the San Diego chapter of the Society of Aeronautical Weight Engineers (SAWE) will meet March 17 in the Hanalei Hotel with social hour at 6 p.m. and Polynesian dinner at 7.

Jack Grace, a Convair advanced propulsion systems project engineer, will speak and show a film on "Electric Propulsion." Reservations are to be made by noon March 16 with Jeweline Richardson, ext. 2296 KM.

Met as Enemies

Ex-Prisoner of War Pen Pals With Guard Who Let Him Flee

By HENRY BOSWORTH
(Reprinted by permission of the Boston Traveler)

They met in a German prisoner of war camp as enemies.

Robert B. Denis, captured Yank. Gustaf Droste, his German guard.

Today, they are pen pals—have been writing to one another for 20 years.

R. B. Denis

In . . . World War II, it would have been impossible to think they could become close friends. Close enough that the German . . . helped the American to escape . . . .

Denis, then a young U.S. Ranger second lieutenant, is now 46 and a systems development specialist with General Dynamics' Quincy division.

Droste, then a Sturm Struppenmann (Storm Trooper) is now in his 70s and a professor of music in Munich.

Denis enlisted seven days after Pearl Harbor, picked up his first of two Purple Hearts in North Africa and had taken part in the invasion of Sicily.

While on a reconnaissance patrol near Foggia, Italy, he was captured Oct. 23, 1943.

The patrol was ambushed. Fourteen were killed. Denis, one of 16 captured, suffering serious head wounds from an exploding grenade. After spending time in prison camps he was used as a hostage with other prisoners.

"They put us in the center of their lines and marched us 400 miles in two weeks to Marseilles, France. This was to keep American planes from strafing their troops."

In February, 1945, Denis arrived at a camp near Heidelberg where Droste was a guard.

"We nicknamed him Gus . . . He gave us cigarettes and salt—real luxuries then . . ."

(Denis commented that prison camps are great for losing weight. He went from 200 pounds to 137 "without trying.")

It was one of those "small world" coincidences that cemented the friendship of Gus and Denis.

"He confided he had a sister living in Salem, married to an insurance man. I asked the name and he turned out—get this—to be my own insurance agent."

At dusk one night, Gus turned his back and let Denis and two others escape.

The three quickly split up. For Denis it was short freedom. He was recaptured five days later.

"I was so weak, I was just sitting there on the bank of the Mainz River with the Allies on the other side. I looked up. It was a German trooper . . . ."

Denis was whisked off to his fifth camp—but this one had no Gus.

"They gave me a going over for trying to escape and broke my leg with the butt of a rifle."

He was sentenced to 15 years at hard labor but invading Americans freed him April 27.

Meanwhile, Gus was in hot water.

"The Germans found him guilty of treason. He apparently had let 50 prisoners in all escape. They sentenced him to death but Americans rescued him."

The pair haven't seen one another since but have a reunion coming up in 1970.

Denis and other ex-prisoners are going back to Germany to celebrate the 25th anniversary of their liberation.

Brrrr! F-111 Undergoes 'Cold Soaking' in Alaska

When F-111A No. 10 made its initial flight from Eielson AFB in Alaska last month, the thermometer read 38 degrees below zero.

It was a bit warmer for No. 10's second flight a few days later—a mere 34 degrees below.

The variable-wing fighter will complete at least four more such sub-zero flights at the Alaskan base.

Purpose is to demonstrate adequacy of the airplane's systems and components in an extremely cold environment.

Air Force is conducting the Category II tests, assisted by a five-man Fort Worth division crew.

I. H. Bullard is technical representative in charge, along with G. A. Rickey. E. A. Rodgers is responsible for spares; W. A. Token for quality assurance; and R. M. Magness for photography.

Eielson AFB is about 20 miles from Fairbanks. "They were having a three-foot snow when the test crew arrived," said E. F. Parham, supervisor 111 field support, "and it has snowed quite a bit since."

No. 10 must be "cold-soaked before each flight—left outside for at least 16 hours in temperatures of 20-below zero or lower.

"The airplane is rolled into the nose dock only occasionally for maintenance-type work," Parham said.

Upon completion of the Alaskan tests, No. 10 will return to Wright-Patterson AFB, where it will be readied for desert tests.

No. 10 has previously been subjected to Arctic-type tests in the cold-weather hangar at Eglin AFB. It remained in the hangar for between three and four weeks, with temperatures ranging from zero to 65 degrees below.

In October, the aircraft underwent humidity tests in Panama, where it completed seven flights. Over 26 inches of rain fell during the testing period.

So far, the F-111A has demonstrated that it can take it in just about any kind of weather.

ARCTIC ASSIST—Fort Worth division people helping in cold-weather tests of F-111A No. 10 in Alaska are, from left, back row: I. H. Bullard, G. A. Rickey and E. A. Rodgers. Kneeling: W. A. Token and R. M. Magness.

Group Will Tour Test Site Facilities

General Dynamics facilities at Harbor Drive Test Site, San Diego, will be viewed next month by delegates to the Western Section of the Society of the Plastics Industry, meeting in Coronado.

They will inspect Convair's oceanographic data-gathering buoy, under construction for the Office of Naval Research, and the towing basin operated by Electric Boat division's Marine Technology Center.

ADMINISTRATORS—Attending Engineering Administrative Conference last month in San Diego were, left to right, Harris Shapiro, Electro Dynamic; Harry Whiteman, Canadair; Clark Bradley, Pomona; Paul Ferrara, Convair; Edward Ball Jr., Corporate Headquarters; Ray Schwarz, Fort Worth; Henry J. Beetz, Electronics; Harry Andrews, Quincy; Victor Boatwright, Electric Boat.

Engineering Administrators Map Plans, Review Objectives For '67

Engineering administrators for a number of General Dynamics' divisions attended an Engineering Administrative Conference Feb. 27 and 28 at Convair division's Kearny Mesa plant.

Edward L. Ball Jr., Corporate director of general engineering and administration, served as chairman and spoke on "The Corporate Look in Engineering Management Systems."

Ball said GD spends up to $500 million each year for engineering and scientific effort. He discussed the need for proper use of this "tremendous outlay," including the cost avoidance aspect of eliminating duplicative technical effort.

He urged administrators to support engineering department heads by making themselves invaluable as consultants and advisers and in assuming responsibility for a large part of the day-to-day routine associated with managing a large group of people.

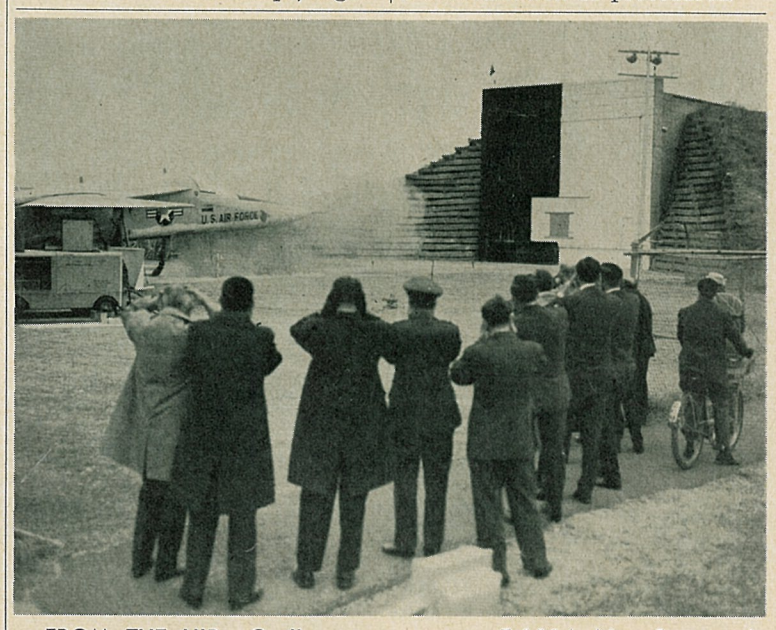
GD Corporate engineering objectives for 1967 were reviewed, including plans for refining division manpower planning, establishing a more formal engineering personnel development program within the divisions and strengthening marketing and program development functions.

As a continuing effort, Corporate Headquarters will work with divisions for improvement of long-range product planning, utilization of personnel and facilities for research and testing, and increased engineering efficiency and excellence.

Ball said new General Dynamics' patent procedures which are being formulated should encourage creativity, maximize benefits and aid in attracting and retaining better employes.

He said the Corporation's administrative personnel upgrade program, now being encouraged in each division, is designed to create opportunity and challenge.

Group discussions were held on manpower management and forecasting, budget control and reporting, task control and schedule reporting, supervisory and management staffing, indirect policy and budgets, internship and personnel rotation, college and professional society activity, interdivision relationships, organizational structure, administrative personnel development and standardization of procedures.



FROM THE HIP—Gatling-type gun on F-111A No. 5 recently was ground-tested at Fort Worth division. Further testing is slated at Eglin AFB, Fla.

F-111's Gatling-Type Gun Packs Powerful Wallop

The F-111's 6,000-round-a-minute Gatling-type gun is being tested by ground firing on F-111 No. 5 at Fort Worth division.

Shortly, No. 5 will be used to put the rapid-firing gun through its paces against both air and ground targets at Eglin AFB, Florida.

"Tests are to determine the 'environment' created by gun-firing," said A. F. Walter, armament design specialist. "We're looking at such factors as load reactions, vibration, temperatures, gun-gas concentrations and pressures—and the behavior of the aircraft and its systems in such environment."

The gun figures to be a mainstay in the F-111A's air-to-air and air-to-ground weaponry. It will be installed in F-111A's No. 19 and on.

Though quite old in principle, the F-111A's Gatling-type gun is a far cry from the hand-cranked version which helped tame the West.

The modern gun still has barrels which rotate as a cluster, as did the old guns, but it is hydraulically powered and electrically controlled.

"And it also has a very efficient and sophiscated system—built by General Electric—which helps move ammunition at the tremendous rates required by the gun," said Walter.

(Actually, this gun is capable of rates up to 7,200 rounds a minute—or 120 rounds a second—but the 6,000 rate is considered most efficient for the F-111A.)

The F-111A gun package has a capacity of 2,000 rounds of .20 mm shells—"about 20 seconds of ammunition."

"This doesn't seem like a great deal," Walter said, "but consider that firing a weapon like this is most often done in short bursts. For example, you can fire 300 rounds in just three seconds, and that's a pretty lethal dosage of .20 mm shells.

"Consider, too, that the F-111A's capacity of 2,000 rounds is greater than that carried by any other fighter or bomber for this particular weapon."

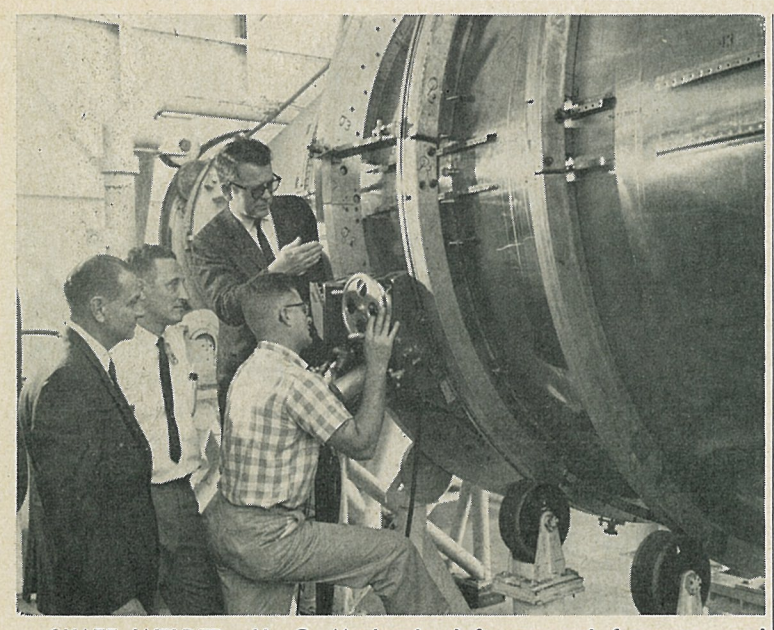
The gun's armor-piercing, high explosive shells have an effective range of up to 4,000 feet.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers among General Dynamics divisions. In parentheses are dates when individuals joined the company.)

GEORGE L. STIEHL JR. (1955) from Convair division to General Atomic; **WILFRED S. GREENE** (1955) from Electronics, San Diego to Stromberg-Carlson, Data Products, San Diego as general accountant; **R. J. D'ONOFRIO** (1966) from Electronics, San Diego to Quincy division; **G. E. RETTIG** (1958) from Electronics, San Diego to Quincy; **JERAULD N. MATTSON** (1952) from Electronics, Rochester to Electronics, San Diego; **CALVIN B. CHAMBERLAIN JR.** (1962) from Pomona to Electronics, San Diego as research engineer; **PAUL R. RITCHIE** (1964) from Pomona to Electronics, San Diego as research engineer; **C. A. VACCARINO** (1965) from Electronics, San Diego to Electronics, Dynatronics, Fla.; **R. E. SUTHERLAND** from Electric Boat to industrial relations staff, Corporate Headquarters; **R. A. RANDOLPH** (1956) from Quincy to Pomona as outside inspection representative; **BOBBY J. POOLE** (1953) from Quincy to senior internal auditor, Pomona; **S. D. HAAS** (1957) from Quincy to Pomona as outside inspection representative.



SKATE WELDER—H. C. Medearis, left, general foreman, and Robert Welk, assistant supervisor of Dept. 758 at Air Force Plant 19, second from left, look on as Robert Bruce, project tool engineer, explains operation of skate welder being operated by E. H. Mitchell, right foreground.

Skate Welder System Results In $262,701 Cost Avoidance

Use of a modified resistance welding "skate" system for joining new payload adapter sections to tapered noses of modified Atlas E and F weapons system vehicles for use by the Air Force as Re-Entry Measurement Program-Phase B (RMP-B) boosters will result in cost avoidance of $262,701.

A similar skate welding system designed and used by the division last year for joining new, heavier nose sections to tanks of similar refurbished Atlas vehicles for the Air Force's Boost Glide Re-Entry (BGRV) program saved $102,000. Welding in that program, however, was on the constant (flat) section rather than tapered surfaces.

Robert E. Bruce, a project tool engineer in Dept. 403-3 who directed the tool design effort on both systems, said new skate tracks were made from surplus launch vehicle skin rings and a new back-up bar and mandrel structure are being used in the RMP-B modification at Air Force Plant 19.

The back-up bar and mandrel, used to hold the tank skin rigid during the welding, is passed in sections through a 22-inch opening and assembled inside the RMP-B booster tanks since the old noses are not being removed.

The welder "skates" along the tracks as it makes about 1,700 welds in attaching each adapter ring.

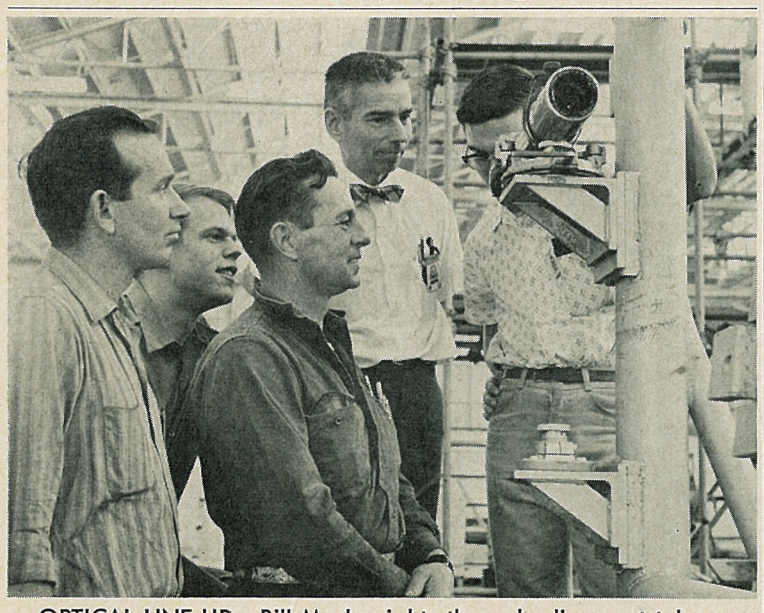
Electrical cable from one side of the welder's power transformer is attached to the skate and the other, to complete the circuit, is run through an access hole and grounded to the back-up bar.

Use of the skate welder system eliminates need for major disassembly of external "hardware" and rotation of the Atlas in a major weld fixture.

"We are now working on the fourth RMP-B booster and the operation is going like clockwork," Bruce said.

Bruce recently received a certificate of commendation for the $262,701 cost avoidance.

Thomas Hughes of Dept. 420-9 was tool designer for the skate welder, equipment manufacturing was by Dept. 451 and proofing by Dept. 768. Dept. 250 personnel handled electrical cable installation. Production welding is being accomplished by E. H. Mitchell of Dept. 758.



OPTICAL LINE UP—Bill Marks sights through alignment telescope on fixture in new Convair optical tooling course held for selected students. Looking on are other students (from left) E. W. Patterson, Bill Allen, Tom Glass, and Instructor W. M. Scott.

Classes in Optical Tooling Conducted on Continuing Basis

Continuous classes in optical tooling are now being conducted on a regular basis at Convair's Lindbergh Field plant following the pilot course recently instructed by E. F. Gurling (Dept. 401-4) under auspices of educational services.

W. M. Scott of quality control is teaching the basic fundamentals of the application and use of optical instruments in building and inspection of jigs and fixtures.

Students learn how to use a sight level and whiteface scales, jig transit, alignment telescope, micrometer for inside dimensions, micro-bar, optical square.

Two classes of four selected students each are held three hours a day for 30 hours. The classes meet in the south end of Bldg. 2 where fixtures have been set up for the students to practice on.

Entered in the classes which ended Feb. 10 were James Morris, Bill Allen, Bill Marks, apprentices in tool and die; Ivan Crane, Paul Roberts, Denny Smith, Tom Glass, E. W. Patterson, all of jigs and fixtures.

Roy Pyles Appointed To Contracts Post In Electronics-SD

Roy A. Pyles joined Electronics operations at San Diego Feb. 20 as senior contracts administrator, reporting to D. L. Illeman, manager of contracts.

Roy Pyles

Since 1961 he has been a contract specialist with the Naval Air Systems Command's Western Regional office, and, as such, was responsible for overall management of field contract administration offices.

For five years before that he was based in Washington, D.C., as senior negotiator of airframe contracts for Bureau of Naval Weapons, predecessor of NASC.

A native of Washington, D.C., Pyles graduated from the University of Virginia with a BS in commerce. He also took graduate courses in law at National and George Washington Universities.

He is active in the National Contract Management Association, currently serving as president of the San Diego chapter.

FLIGHTS REVIEWED IN JOINT MEETING

Representatives from NASA Lewis Research Center, Douglas Aircraft Co. and the National Bureau of Standards were at Convair recently for a low-gravity propellant management data review.

The review included analysis of Convair's Atlas-Centaur 9 flight Oct. 26, 1966, which marked the first successful restart of large liquid hydrogen engines in space after a 24-minute low-gravity coast period, and of the Saturn AS-203 flight July 5, 1966, for verification of liquid hydrogen propellant management in low-gravity environment and main engines "second start conditions."

Deane Davis, Convair's Centaur program manager, welcomed the group. James Berns, Fred Yeh, Raymond Lacovic and Steve Szabo of NASA-Lewis described the AC-9 mission. Data was presented by Fred Merino, William Stubblefield and Roger Yurczyk, all of Convair.

Saturn AS-203 flight data was presented by Dale Smith of Douglas. Robert Arnett of the National Bureau of Standards headquarters in Denver described a tank thermodynamic analysis computer program.

George C. Wilson, group engineer in Convair's launch vehicle programs thermodynamics group (Dept. 966-3), was chairman for the review.

LF PLANT ELECTRIC SYSTEM IMPROVED

The original electrical sub-station installed in Convair's first production building, Bldg. 1 at Lindbergh Field plant, when the company was established in San Diego in 1935, finally ended its term of service the middle of last month.

Transformers were removed from the Bldg. 1 patio area and the switchbox board from within the building and loads transferred to other transformers within Bldg. 1.

A main switch for power to the south half of the plant was installed in the former location of the transformers in the patio, and a new switch to the high voltage feeder for Bldgs. 5 and 51 was added to the electric substation which now serves the south half of the plant.

An interconnection was installed between the north and south portions of Lindbergh Field plant so that, in an emergency, power can be fed to either half.

Plant engineering has been working the last six months on the relocation.

High Quality Proposal Guidelines Distributed Through Division

A new booklet, "Guidelines for a High Quality Proposal," has been published by Convair's proposal development Dept. 580-2 and is being distributed throughout the division to personnel concerned with preparation and quality of proposals.

W. F. Chana, chief of proposal development, said the new booklet is to be used in conjunction with the "Proposal Leader's Portfolio" and the "Convair Style Guide."

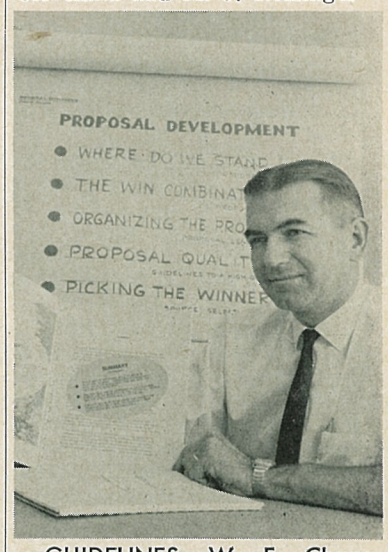
The booklet is a compilation of sample proposal pages with brief "guidelines" superimposed over each page.

Jack L. Bowers, Convair division general manager, in a memorandum being distributed with the "Guidelines" said, "Every proposal we submit plays a role in building Convair's reputation, and it is an important tool in our continuing sales effort.

"As we pursue new business, we must make certain that our proposal documents reflect Convair quality, just as the products we deliver to the customer reflect this same quality," he said.

Chana's section is available on request to brief groups from any department on major proposal development considerations.

Chana and three members of his section—L. D. Minor, H. B. Cleveland and M. J. Redlinger—



GUIDELINES—W. F. Chana, chief of proposal development for Convair division, discusses new "Guidelines for High Quality Proposal" booklet now being distributed.

assist proposal leaders with overall proposal planning.

Parents of High School Seniors Reminded of Club Scholarships

Sons and daughters of Convair employes who plan to apply for one of the four scholarships offered this year by Convair Management Club must have their applications in before the end of this month. Scholarships will be $350 each.

Official application forms may be obtained from the Management Club office at the Kearny Mesa plant, ext. 3146; from educational services offices at both Kearny Mesa and Lindbergh Field plants; and from any high school in the San Diego area.

These forms, and high school transcripts, must be turned into the Management Club office, Zone 130-00, before March 31.

All applicants must be high school seniors or high school graduates of not more than one semester before date of application. They must be in the upper third of their class scholastically. Their parents or legal guardians must be employed by Convair at the time of application.

Winners will be selected by the scholarship committee on a basis of scholarship, extracurricular activities, leadership qualities and personality, honors and awards received during high school.

Scholarships will be remitted to the accredited college or university of the winners' choice to be applied on tuition and fees.

'Ladders' Planned For Tennis Players

CRA Tennis Club is developing tennis "ladders" for use in match play and rating of players from General Dynamics facilities in the San Diego area.

Employes and family members interested are asked to contact Cecil Norwood (advanced ladder), ext. 2766 KM; Mike Griggs (intermediate ladder), ext. 3636 KM; Jim Jobe (novice ladder), ext. 3468 KM, or Tony Purczynski (women's ladder), ext. 2135 KM.

Road Runners Set Ocotillo Wells Trip

Road Runners will rendezvous at Ocotillo Wells Trailer Park on Hwy. 78 this weekend (March 10-12) for a desert outing.

Bob Kramer, wagonmaster, reminds trailerites to bring firewood. The park is equipped with electricity, water, and restrooms. Overnight charge is $1.50 per unit and an additional 25 cents a person.

Next meeting will be March 23, 7:30 p.m., at the Gillespie Field Clubhouse.

Wives Will Elect New Officer Slate

Convair Wives will chose officers for the 1967-68 club term at next Wednesday's (March 15) luncheon in the CRA Clubhouse.

Officers will be installed and service awards for the last year presented at the April 19 luncheon at Valley Ho restaurant.

Gil Hutter of Prophet Co. is in charge of catering the March luncheon which will be the only formal meeting of the club this month. The usual potluck has been cancelled because it would fall during the Easter holidays.

Reservations should be made with Jeanne Beatty, 273-3971, or Vera Whitbey, 283-8971.

Pettyjohn, Rinker Color Slides Win

Bob Pettyjohn won top honors in the beginners division for best color slides submitted in the first quarterly contest of the year for CRA Camera Club members Feb. 19.

Winners in the advanced division were Ken Rinker with two winning slides, Gerhard Gross, and Al Oehler.

Next meeting will be March 19, 7:30 p.m., in the Photo Arts Bldg., Balboa Park.

26th Annual Plant Bowling Championships Dates Chosen

It's that time again—when GD bowlers choose up sides for the 26th annual CRA plant bowling championships.

All keglers with established averages at any GD facility, including Stromberg-Carlson and Electronics, are eligible to enter the tournament which is set for the last two weekends in April, April 22-23, 29-30.

Location has not yet been selected.

Entries are open now for teams and doubles—men and mixed; singles and all events for men and women.

Forms must be turned in by April 14. They may be obtained from any employe services outlet; CRA Clubhouse, Kearny Mesa; from Bowling Commissioners Mike Brooks, ext. 2850 KM, Forest Erwin, ext. 2884 KM, and Jim Hayman, ext. 1360 LF; or at any of the bowling alleys where CRA leagues are bowling this season.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111, Kearny Mesa. Deadline for next issue of GD/News is March 14. Call ext. 1071 LF or 3322 KM.)

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ADVENTURERS — Meeting March 15, 7:30 p.m., CRA Clubhouse.

BADMINTON — Play Monday, 7-10 p.m., Federal Bldg., Balboa Park.

BOWLING—Entries open for annual CRA plant championship tourney. Forms at all employe services outlets and CRA Clubhouse.

BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.

CAMERA CLUB—Meeting March 19, 7:30 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS — Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS — Meeting March 15, 7:30 p.m., Convair cafeteria, Lindbergh Field.

CONVAIRIDERS — Ride and picnic at El Monte Park March 11. Meet at Parkway Bowl, 9 a.m.

DELTA DIVERS—Meeting March 8, 7:30 p.m., CRA Clubhouse. Abalone dive March 19, Whale View Point, La Jolla.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Fishing derby March 11-12, Lake Jennings. Meeting March 21.

HI-FI/MUSIC—Meeting March 14, 7:30 p.m., CRA Clubhouse.

ICE SKATING—GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

JUNIOR SCIENCE — Meeting March 17, 7:30 p.m., CRA Clubhouse.

PISTOL CLUB—Convair vs. Solar match March 12, 8:30 p.m., SD Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting March 16, 7:30 p.m., CRA Clubhouse.

RIDING CLUB—Meeting March 8, 7:30 p.m., CRA Clubhouse.

RIFLE CLUB — Seniors shoot tonight, March 8, 7:30 p.m. Juniors shoot March 18, 1 p.m., Gillespie Field Range.

ROCKHOUNDS — Meeting March 8, 7:30 p.m., CRA Clubhouse. Field trip to Boron March 18-19.

ROLLER SKATING—Free skate night March 20, Skateland, Front and G Sts. Tickets at all employe services outlets.

SQUARE DANCING — Beginners class closes for enrollment March 14, 8 p.m., CRA Clubhouse.

SPORTS CAR CLUB—Meeting tonight (March 8), 7:30 p.m., Convair executive dining room, Lindbergh Field. La Separateur rally March 19.

SWIMMING—Free swim night March 18, 7-9 p.m., Mission Beach Plunge. Tickets at employe services outlets.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., both at CRA Clubhouse.

TOASTMISTRESS CLUB — Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

TRAILERS — Road Runners field trip March 10-12 to Ocotillo Wells Trailer Park.

TROPICAL FISH — Meeting March 13, 7:30 p.m., CRA Clubhouse.

VOLLEYBALL—Team rosters for CRA shop league due by March 15 to Pete Beyrer, ext. 1111 KM.

WIVES—Election of officers at March 15 luncheon, CRA Clubhouse.

WOMEN'S GOLF—Monthly tourney March 11, Singing Hills. Tee-off time, 10:30 a.m.

Feb. Winners Listed For Bridge Club Play

CRA Bridge Club Feb. 17 winners were Eve Leasure and Francys Darr, North-South, and R. Erickman and L. F. Weikum, East-West. Winners in Feb. 24 play were Howard McCullough and Mrs. Don Abernathy, North-South, and Mr. and Mrs. W. B. Evans, East-West.

Participation in Bridge Club play at 7:30 p.m. Fridays has increased, but there is still room for more players. First-timers are asked to arrive a few minutes early for practice with experienced players to familiarize themselves with minor differences between rubber and tournament play.

Sports Car Rally Set For March 19

CRA Sports Car Club will stage its third "La Separateur," European-type rally, March 19 from CRA Clubhouse parking lot, Kearny Mesa.

First car will start the four-hour course at 7:01 a.m.

The rally will take drivers over 200 miles of dirt and paved county roads. Contestants will have a chance to pre-run the route after they sign.

Entry fees are $4 a car; $2 per team.

Trophies will go to the top two teams and to the five leading drivers and co-drivers.

Forms are at all employe services outlets and CRA Clubhouse. For information call Bruce Bertsch, rallymaster, 277-7658, or Marvin Jensen, 453-4927.

Rockhounds to Hear About Early Mines

CRA Rockhounds will hear Richard Bettell tell about gold mining in Southern California from 1849 to 1860 in a meeting at 7:30 this evening (March 8) in CRA Clubhouse auditorium at Kearny Mesa.

Bettell, a former miner, has researched old mines and methods as a hobby.

The club plans a field trip to Boron March 18 and 19.

Stan Sharp Is Low In Golf Tourney

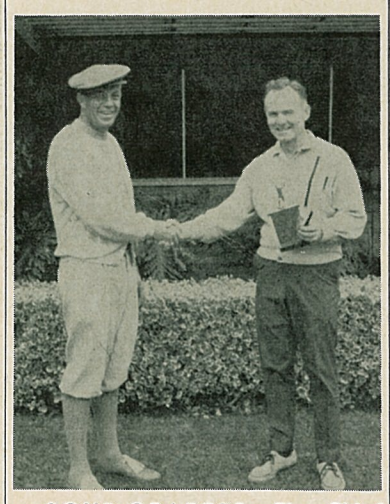
Stan Sharp, manager of industrial security, proved he was top man—and not just by position alone—when he emerged No. 1 in the department's first golf match at Singing Hills late last month.

Sharp shot a 61 (6-stroke handicap) on the par-61 course. He was second low gross, too, but declined that trophy in favor of the top net award.

Jimmy Johnson's 65 was good enough to win low gross trophy in the Feb. 25 game.

Pleas Puckett beat Jack Albright to break the tie for net runner-up.

Altogether, 28 firemen and guards paired off. Wives kept score.



SOUR GRAPES?—Fire Chief Del Dimmitt (in sky blue and white ensemble) "congratulates" Stan Sharp, manager of industrial security, who won department's first links battle.

Irene Taylor Rolls Nine Strikes in Row

Irene Taylor, bowling with the Electronics Mixed League, turned on the heat the other night to roll nine strikes in a row for a 255 game, well over 100 points more than her normal average!

Irene, a statistical clerk in Electronics estimating, bowls regularly with the Thursday night league at Frontier Lanes.

Draw To Be Made For Gulls Tickets

Sixty tickets for San Diego Gulls home ice hockey games will be awarded in the last CRA drawing of the season March 15.

The tickets (in multiples of two) will be for games March 16 with Vancouver, March 18 with Oakland, March 23 and 25 with Victoria, March 30 with Los Angeles and April 2 with Oakland.

An employe may enter by depositing a slip with his name, division, plant, department number, shift and plant phone extension in deposit boxes.

Boxes are at Convair, Stromberg-Carlson and Electronics-SD employe services outlets, Bldg. 51 engineering mailroom at Lindbergh Field, H. C. Medearis' office at Air Force Plant 19 and CRA Clubhouse.

Ranscht 'Doubles' In Pistol Shooting

Warren Ranscht of Dept. 967-3 edged Joe Williamson to take first in both the .22-cal. Camp Perry Match and the center-fire Short National Match in CRA Pistol Club competition Feb. 12.

Ranscht led the Camp Perry master class with 295 out of 300 points. Williamson, club commissioner, was runner-up with 291. In third spot was Harry Black, 285.

Dick Sutton topped the expert class with 279 points. Second-place went to Dale Young, 275; third, Bill Worthington, 271.

In Short National firing, Ranscht scored a 277 over Williamson's 268. Roland Schneider was third with 251.

Next match will be Sunday, March 12, 8:30 p.m., at the SD Police Pistol Range when a Conviar team will meet Solar.

Fishermen Slate Lake Jennings Trip

CRA Fishing Club has scheduled its next monthly fishing derby for March 11 and 12 at Lake Jennings, east of El Cajon. A 6:30 p.m. Saturday fish fry and potluck is scheduled for those staying overnight at the lake campgrounds.

Fish of any species caught either day will be eligible for prizes. Validated weight slips will be required. Prizes will be awarded at the club's March 21 meeting.

Annual club membership fee of $1 per family is due.

Rifle Club Members Fire in State Shoot

Three Convair rifle club members—Dave Farrelly Sr. of Dept. 572-1, Dave Farrelly Jr., 17, and Richard Ellis, 19—fired in the California Rifle and Pistol Association's state gallery championships in Burbank.

Ellis and Dave Farrelly Jr., were "high men" on different maverick teams with which they entered and young Farrelly nosed out his father in off-hand position firing, 731 to 727. Ellis scored 765 out of a possible 800 points for his classification.

Divers to Vote, See Vacation Slides

Delta Divers will elect officers and see slides made by members on vacation and camping trips at their meeting at 7:30 this evening (March 8) in CRA Clubhouse.

The club's first abalone dive of the season is scheduled from 9 a.m. until noon March 19 at Whale View Point, La Jolla.

LEAGUE LEADERS—Convair hoop squad at Vandenberg AFB led Santa Maria Industrial League in first-half season play. Left to right: Leon Lopez, Jim Cavender, George McGavern, Ken Walker (standing), Bobby Hughes, Larry Tillis, Jerry Lauderdale. Team won 10 and lost one, rolling up 569 points to opponents' 410.

Underbrush and Plastics Win Basketball Play-Offs

Underbrush defeated R&E, 48-34, in a play-off game Feb. 22 to win the CRA fast-break basketball plant league championship and Plastics topped Bullet Biters, 30-22, in a play-off March 1 to take the slow-break league crown.

Members of the two championship teams will receive trophies at an awards dinner at 6:30 p.m. March 15 in the Convair executive dining room at Lindbergh Field.

Underbrush was undefeated during the first half and R&E during the second half of fast-break league play. Plastics won its five first-half season games in the slow-break league, and Bullet Biters lost one game to Plastics in second-half competition.

Second-half standings:

FAST-BREAK

Team	Won	Lost
R&E	5	0
Underbrush	4	1
Flight Control	3	2
Hot Shots	2	3
Centaur	1	4
Cosmo Bums	0	5

SLOW-BREAK

Bullet Biters	4	1
Plastics	3	2
Gyros	3	2
Stromberg-Carlson	3	2
Bean Counters	2	3
LF Jets	0	5

Cyclists to Combine Bike Ride and Picnic

Convairiders will combine a bicycle ride in the country with a family picnic at El Monte Park Saturday (March 11).

Members will meet at 9 a.m. at Parkway Bowl, Cuyamaca Street and Fletcher Parkway, El Cajon, and ride to the park.

Ron Kygar of Dept. 961-2, ride leader, said terrain for the 25-mile round-trip is generally level and suited for 3-speed as well as 10-speed bikes.

Sixteen Convairiders made the 50-mile Oceanside ride.

Cy Campbell, awards chairman, presented a club cycling jersey to Al Brown for accumulating 200 miles on club rides.

Bargain Tickets

(Following are bargain-rate tickets currently available to employes. Unless otherwise stated, they are offered at employe services office of Convair, Stromberg-Carlson, Electronics-SD, Bldg. 51 engineering mailroom, Lindbergh Field, H. C. Medearis' office at AF Plant 19, and CRA Clubhouse.)

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Gulls vs. Victoria hockey game, March 23, $2 (50c discount).

"Grand Prix," Center Theatre, Mission Valley, 8 p.m., March 30, $2. Tickets on sale March 17-27.

"Peter Pan," Circle Arts Theatre, 2:30 p.m., March 19, $3 and $2 ($1 discount). Deadline March 13.

Miss San Diego Pageant, April 1, Scottish Rite Masonic Center, Mission Valley, $1.50. Deadline March 29.

Lens Club to Hear Illustrated Talk

Jim Mildice will give an illustrated talk on "Light and Dark, and How to Tell Them Apart" at the CRA Camera Club's March 19 meeting, 7:30 p.m., Photo Arts Bldg., Balboa Park.

He will explain how light meters react under various light conditions and why. Beginners and experts are urged to attend the session which is open to anyone interested in photography.

Sherri Special Wins Equitation Overall

Sherri Special won the trophy for best overall standing in equitation events and Terri Clark was high-point winner in the gymkhana division at CRA Riding Club's open horse show Feb. 19.

About 50 horsemen competed in the all-day riding competition.

Runners-up in equitation were Sheila Payne and Charlann Harmer. Davy Watson was second and Mike DeLeonardo, third, in gymkhana contests which included pole bending, clover barrels, figure eight stakes, and flag race.

No horse show has been scheduled for March since the Convair group will travel to San Juan Capistrano over the weekend of March 18-19 to take part in the Fiesta de Golladrinas, traditional observance of the swallows' return. The Riding Club's color guard will ride in the parade on Saturday, March 18.

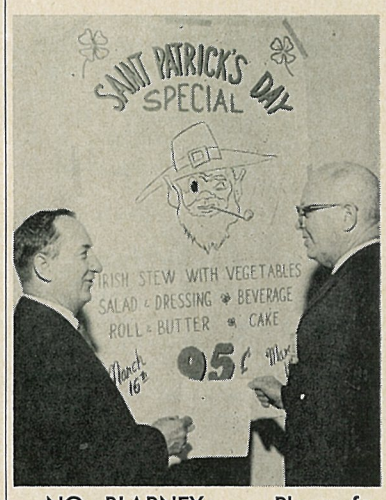
'Holiday' Luncheon Menus Scheduled

Cafeterias at Kearny Mesa and Lindbergh Field plants are planning special "holiday" luncheon fare for employes at least once each month.

Special menus are planned for both St. Patrick's Day and Easter.

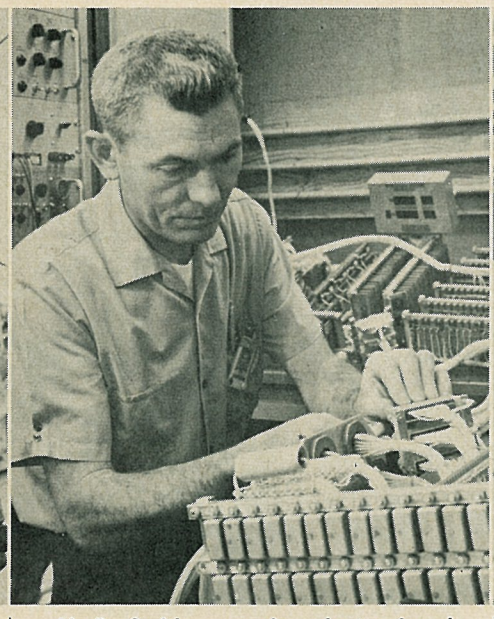
Gil Hutter and John Curry, Prophet Co. cafeteria managers, said the St. Patrick's Day lunch March 16 will include Irish stew. Cost will be 95 cents.

The Easter menu, to be served March 22, will include Swiss steak, mashed potatoes, etc., at $1.

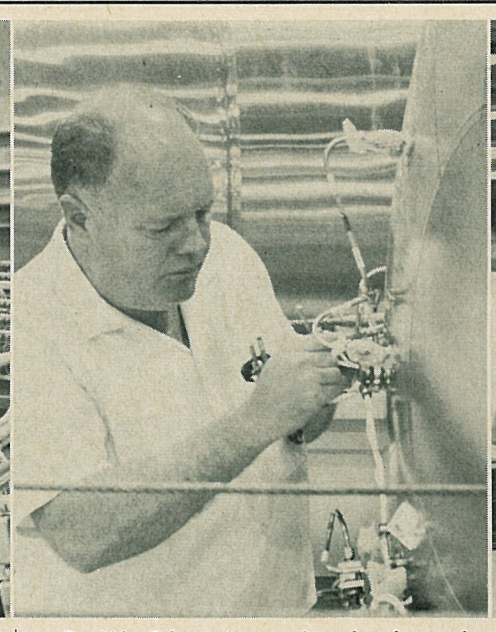


NO BLARNEY — Plans for special St. Patrick's Day lunch at Convair cafeterias are discussed by Gil Hutter, left, Prophet Co. cafeteria manager at Kearny Mesa, and James K. Field, Convair chief of employe services.

Hal Collamer, plumber, repairs a steam trap for an overhead heater as he works in the plumbing shop at Lindbergh Field plant. Collamer has been a plumber in Convair maintenance for over 15 years. He brought his family (wife and one-year-old son) from the East Coast to go to work for Convair in September of 1951. Before moving West, Collamer was foreman of a poultry farm in Vermont and practiced the plumbing trade in his spare time. He, his wife, Patricia, and family make their home in Clairemont. Both Hal and Patricia devote most of their spare time to the activities and interests of their four children: Barbara Ann, 10; Mike, 11; Richard Hal Jr., 16; and daughter, Mary Jane, 19, who was recently married. Hal is starting his third year in Little League this season — he served as team manager the last two years. Scouting occupies most of the rest of his off-work time. His wife helps with Scouting and PTA, and keeps busy during summers conducting backyard swimming classes for youngsters.

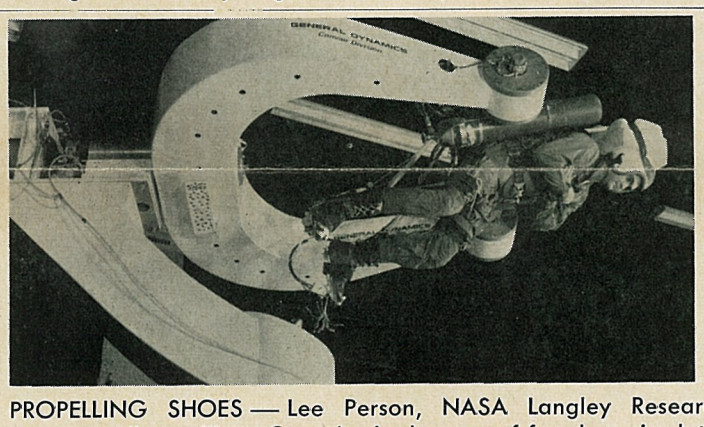


H. B. Smith, a senior electronics development technician in Dept. 780-2, is shown looking over a research and development "breadboard" for the Convair advanced autopilot. The new autopilot is under development for future use in launch vehicle flight control systems. Smith is a native of Florence, Ala., and operated a service station, a war surplus business and a janitorial supplies firm there before joining Convair in 1953 as an electrical and radio mechanic at Air Force Plant 19. He attended evening classes at Electronic Technical Institute in San Diego two years and worked in the avionics department at North Island NAS for a few months before rejoining Convair in 1958 as an electronics development technician. Smith lives with his wife, Donna, and four children—Charles, 7, John, 6, Leslie, 5, and Jeffrey, 3,—in Escondido. He has been attending evening courses in woodworking at Palomar College, has built several pieces of furniture and recently completed addition of a family room to his home.



R. W. Edge, inspection leadman in Convair's Dept. 957-0, is pictured inspecting the oxidizer tank probe installation on the first new Atlas SLV-3C at Kearny Mesa. A native of Pennsylvania, he has held a dozen different inspection classifications with Convair since joining the division in 1956 and formerly had off-site assignments at Edwards Rocket Base, at Cheyenne, Wyo., and Salina, Kan. He now is responsible for inspection of parts and assemblies and for related tests that are required for build-up of the SLV "basic booster." Edge's first Convair duties were the F-106 program and he says he "really appreciates the fine early training" he received for inspection in sheet metal, heat treating, sub assembly, final assembly and receiving inspection areas. "The company has tremendous training programs and every assignment I have had has been real enjoyable work," he said. Edge lives with his wife and children, Sharon, 20, and Raymond Jr., 16, in Serra Mesa. He has been active in Scouting for years.

Betty Klumpp likes to work with tool and is proficient as a saw operator i first-cut department (Dept. 836-1) at Lindbergh Field plant. She was snapped cutting angles on an aluminum extrusion. Betty received her ten-year service emblem in January and has been in first-cut operations over three years. She joined Convair in assembly at the beginning of the 880/990 program and was assigned to riveting and drilling tail sections, first for Convair-Liners and then for jet transports. In her training class she was picked from the other women to head up a group and show them how to handle tools. Betty had learned from her husband when she helped him build a boat. She likes to work with her hands, even for recreation, and devotes her spare time to handwork such as crocheting and leather tooling. She keeps abreast of arts and crafts by attending adult classes in National City where she and her husband, William, live. They have two grown children, William Jr., and Loretta, both married.



PROPELLING SHOES — Lee Person, NASA Langley Research Center test pilot, utilizes Convair six-degrees-of-freedom simulator in test of jet shoe system.

'Jet Shoes' For Space Walks Tried Out in Simulator

NASA Langley Research Center representatives were at Convair's Kearny Mesa plant last month for testing of "jet shoes" similar to those that some day may be used by astronauts to propel themselves in space.

Otis J. Parker, program manager, and David F. Thomas Jr., research engineer for the jet shoes program for Langley's spacemechanics division, directed the joint test in which the Convair life sciences section's six-degrees-of-freedom simulator was used.

Lee Person, NASA Langley test pilot, used the shoes while the simulator permitted complete freedom of roll and pitch movement. Robert Brazell, Convair life sciences Dept. 592-0 senior research engineer, also tried the unique devices.

The jet shoes, developed by NASA Langley and conceived by John D. Bird, head of Langley's astromechanics branch, utilize thrust jets clamped under the ball of each foot to give forward or backward thrust.

Each shoe operates independently. A small switch taped under the big toe inside each of the shoes can be actuated by flexing the toes.

Parker said the shoes are tentatively scheduled for tests in space in the Apollo Applications program.

Nurse Call System Introduced by S-C

A new nurses call system and a complete family of bedside and nurse duty stations have been introduced by Stromberg-Carlson.

All new decorator styling and solid-state circuitry highlight the system which features coded tone call signaling at the nurses' master station for instant identification of patient status — "normal," "urgent," or "emergency." Communication between master stations on different floors is also offered for added system flexibility.

Heart Association Gets Con-Trib Gift

Convair Employes' Con-Trib-Club committee last month allocated $7,500 to the San Diego County Heart Association for purchase of a video-trainer system and associated equipment for use at the Heart Center at Sharp Memorial Hospital in training special nurses for monitoring of heart patients.

The committee also made grants of $5,000 to the San Diego Society for Crippled Children for its Easter seal campaign; $2,500 to the YMCA for its sustaining membership drive and $1,000 to the San Diego Symphony Orchestra Association for its children's concerts.

A plaque was presented by United Community Service in recognition of Con-Trib-Club's $250,000 pledge for support of its member agencies.

UCLA Medical Group Briefed

Eleven members of a UCLA areospace medicine group postgraduate class were guests of Convair division's life sciences section Feb. 24 for briefings and a plant tour.

After a general discussion by Dr. Robert C. Armstrong, manager of life sciences, briefings were given on aerospace medicine by Dr. J. P. McCann, crew performance by Dr. R. S. French and life support engineering by G. L. Drake. Bio-monitoring techniques were described by Dr. W. A. Shafer and simulation techniques by R. R. Brazell.

The group was welcomed by W. E. L. Boyce, director of research and information sciences, briefed on Convair organization and products by Ray T. Blair Jr., assistant to the general manager, and saw a Convair-produced film on "Living in Space."

Dr. James Roman, chief of the biomedical program office for NASA's Flight Research Center at Edwards AFB, also spoke.

"Copper" is Theme For Coin Exhibits

CRA Coineers will base their displays on the "Copper" theme for the March 15 meeting, 7:30 p.m., in Convair cafeteria, Lindbergh Field. Two albums will be given as door prizes. A drawing will be held for an uncirculated 1899 Liberty $5 gold piece, BU 1945S walking Liberty half-dollar, BU 1957D half-dollar; BU 1950D nickel.

Safety Engineers Tour Kearny Mesa

Members of the San Diego chapter of the American Society of Safety Engineers visited Convair division's Kearny Mesa plant March 7 for lunch, a business meeting and plant tour.

Three members of the Convair safety section are officers of the chapter. J. W. Garrison, chief safety engineer, is first vice president. L. D. Simmons is program chairman, and L. J. Breen is educational and community service chairman.

Score of General Dynamics Earn Quality Certification

Twenty-four members of the San Diego section of the American Society for Quality Control have been certified by the ASQC as quality engineers. Twenty-two of the 24 are employed at General Dynamics facilities in the San Diego area.

Convair employes receiving certification were D. R. Archibald, J. F. Baebler, W. H. Behrens, E. G. Callard, R. S. Campbell, J. E. Cook, L. S. Franklin, L. I. Fredrickson, J. R. Frogge, P. E. Gelles, L. I. Medlock, H. H. Mishler, R. H. Nicholson, B. W. Pesta, Sam Petcher, W. F. Rice, E. G. Smith, S. S. Smith and R. D. Woodward.

Others at General Dynamics facilities were J. Z. Mraz of Defense Contract Administration Services plant representative's office at Convair, Arthur Dickman of Electronics-SD and I. L. Kemper of Stromberg-Carlson Data Products.

Mishler, chairman of the San Diego section, said the new ASQC certification program establishes quality engineering as a new profession.

Initial quality engineer certification was limited to fellow and senior ASQC members who have made "outstanding contributions" in quality control.

Certification for other members will require satisfactory completion of ASQC-approved college-level curriculum and passing of proficiency examinations.

Missile Pioneers Plan Cape Meeting

Employes who worked at Cape Kennedy between 1940 and 1966 are eligible for membership in the newly formed Missile, Space and Range Pioneers, Inc., organiaztion.

The first reunion, to be known as Pioneers' Day, is scheduled April 4 in Cocoa Beach in conjunction with the Fourth Space Congress. Several nationally known missilemen will speak.

Dues are $2 annually. Application forms can be obtained by sending a self-addressed, stamped return envelope to Missile, Space and Range Pioneers, Inc., P.O. Box 1000, Cocoa Beach, Fla., 32931.

Jack L. Bowers, Convair division general manager, is a member of the organization's board of advisers for 1967.

CONVAIR DANCERS TO GO TO POMONA

Convair Square Dancing Club will travel to Pomona this Saturday, March 11, to join the Pomona group for an evening of dancing. This is the 14th annual get-together of the two clubs.

Mariner Mars Team Will Visit Convair

A project team for Mariner Mars 1969 missions, headed by H. M. Schurmeier, program manager for Jet Propulsion Laboratory, will be at Convair division's Kearny Mesa plant tomorrow (March 9) for a presentation and plant tour. Robert Benzwi of Convair's Centaur program office wil be host.

Two Mariner spacecraft are to be launched for Mars flybys in early 1969 from Complexes 36A and B at the Eastern Test Range to obtain scientific data and aid in development of technology for future application. The spacecraft will carry high and low-resolution television cameras for photography of the planet.

Club to Hear About Recording Method

Dr. William J. Schart, manager of mathematical analysis and scientific programs for Convair, will discuss an old and relatively little known recording method at a CRA Hi-Fi Club meeting at 7:30 p.m. Tuesday (March 14) in CRA Clubhouse.

Schart, who plays the piano as a hobby, will present recordings made by the method of such famous pianists as Paderewski, Chopin, and Debussy. Guests are invited.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 6 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, March 22, 1967

Atlas and Agena Mated For NASA Satellite Shot

Convair's Atlas SLV-3 No. 5102 has been mated with an Agena second-stage vehicle and readied for launch of NASA's Applications Technology Satellite-A next month from Complex 12 at the Eastern Test Range.

The Satellite, second in the ATS series, will be fired into a 6,000-nautical-mile orbit and will operate three years.

Convair engineers were at the Cape last week with Jim Von der Wische, Convair program manager for NASA SLV-3 programs, for an equipment assessment and flight readiness review.

J. W. Ball of Dept. 969-0 was team captain. Others, their departments and areas of responsibility were:

V. S. Yerebeck, 969-0, product review; C. C. Campbell, 958-4, equipment assessment; J. P. Spieker, 956-0, reliability control; W. E. Evans Jr., 967-3, propellant utilization; F. F. Manning, 962-2, engine systems; H. E. LaNois, 962-3, pneumatics; G. D. Clapp, 962-5, hydraulics; L. R. Lisak, 988-7, electrical; R. S. Stevens, 961-2, structures; J. M. Simmons, 967-7, radio frequency systems; F. L. Cook, 967-9, telemetry and instrumentation, and H. J. Minch and R. L. Shoff, 551-2, autopilot.

Next Salvage Sale Scheduled April 1

Next open date for the Convair salvage yard at Lindbergh Field plant is Saturday, April 1. The yard, adjacent to Gate 5, will be open for employe sales from 8 a.m. until noon.

No children under 15 years of age are allowed in the yard. And, no one wearing soft shoes, tennis shoes, or open-toe shoes will be admitted because of the safety risk.

Funds For Centaur Services Allotted

Convair has received a $17,367,792 contract from NASA Lewis Research Center for management and engineering services for the Centaur program in 1967. Incremental funding of $10 million was approved with award of the contract.

J. H. Edwards, Convair chief of launch vehicle contracts for NASA programs, said the contract covers project management administration, technical management and control, production management and control, reliability and quality assurance, system integration and analysis, computer programs and management, engineering and test evaluation, design changes and design improvement studies, long-range planning, engineering mock-up and programming, and liaison engineering.

GD Engineers Staff Review Courses

General Dynamics engineers will staff two professional engineering examination review courses to start March 27 at Roosevelt Junior High School.

J. O. Tearnen, General Atomic staff member; D. R. Lukens, Convair dynamics group engineer; and W. J. Sevier, Convair senior design engineer, will conduct the mechanical engineering review.

E. A. Hamilton, senior electronics engineer, and R. K. Walter, staff specialist, both of Convair, will conduct the electrical engineering review course.

Both courses are designed to cover subjects of the professional examinations offered by the State Board of Registration for Civil and Professional Engineers on Aug. 19.

Registration may be made at the first class meeting Monday, 7 p.m. Both courses qualify under the General Dynamics tuition refund program.

Unlimited Access to Attractions, Rides Promised at Disneyland

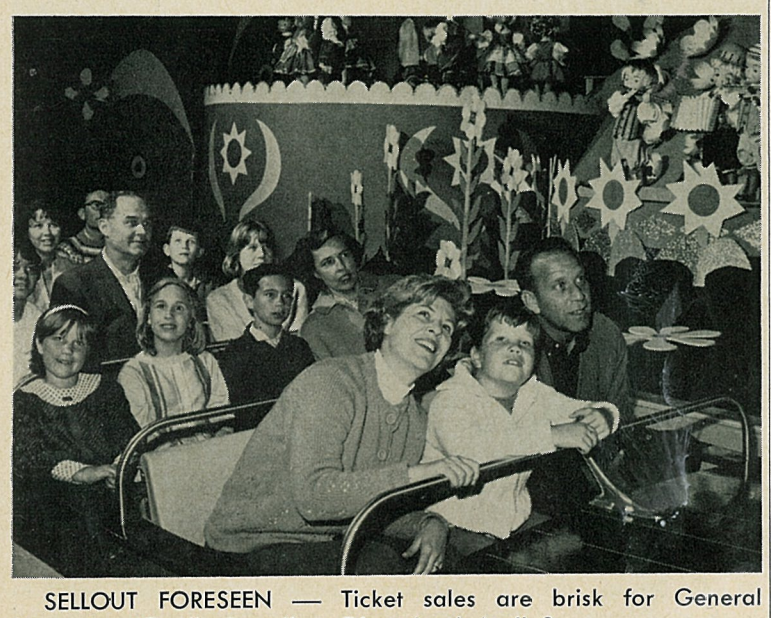
If early ticket sales are an indication, the General Dynamics family party under Convair Management Club sponsorship April 8 at Disneyland should be a complete sellout.

"Demand has exceeded our expectations," Don Evanson, planning committee chairman, said. "Employes are strongly advised not to wait until the last minute to purchase their tickets."

Tickets are on sale at $3.75 each at all employe services outlets and other designated offices. Round-trip bus tickets also are available at $3 each. Parking will be free.

Employes and their family members and friends attending will have unlimited use of all rides and attractions normally open during the evening, including the new "It's a Small World," "New Orleans Square" and "Primeval World" attractions.

Disneyland will be open for the party from 8 p.m. to 1 a.m. Bands will provide dance music and food concessions will offer reduced prices.



SELLOUT FORESEEN — Ticket sales are brisk for General Dynamics "Family Party" at Disneyland April 8.

Housekeeping Stressed In New Plant Program

A new "clean-plant" program for Convair division was outlined by Jack L. Bowers, general manager, Monday and yesterday at meetings for all supervisors at Kearny Mesa and Lindbergh Field plants.

Bowers said participation by all employes is vital in order to assure tidiness and cleanliness of all work and storage areas on a continuing basis.

E. D. Bryant, vice president-operations, has overall responsibility for the clean-plant program. John P. Hopman, his assistant, is program chairman.

Plant-wide good housekeeping standards and checklists and a definition of personnel responsibilities for good housekeeping tasks were distributed to supervisors.

Janitorial service is provided on a scheduled basis by plant engineering for tiled floor and restroom facilities, waste paper and trash removal and dusting tops of cabinets if they are cleared of material and equipment.

Blackboards will be washed if a note is left on the board. Other services such as washing walls and repairs are to be requested as needed by calling maintenance dispatch, ext. 1130 KM or ext. 575 LF.

Departmental responsibilities include dusting and polishing desks, chairs and tables; emptying and cleaning ash trays; clean-up of coffee spillage; dusting of office machines and covers; cleaning of telephones; and assisting as needed in dusting file cabinets.

Factory personnel are responsible for sweeping floors within departmental boundaries, chip removal, emptying of waste baskets and trash barrels and routine cleaning of machinery and equipment.

"Housekeeping" is being included as a routine part of each personnel evaluation. The housekeeping checklist covers such items as clothing and lunch storage, desk appearance, dust accumulation, floor appearance and safety considerations such as flammable liquid storage.

Bowers reminded supervisors that they and employes under their direction spend 1/3 of the 24 hours in every workday in their work areas and emphasized that cleanliness is as important there as in their homes.

Training courses to improve job proficiency for employes in janitorial and material handling departments are being scheduled. Formal classroom training for janitors will begin next month.

Supervisors have been asked to meet with janitors assigned to their areas to create "team spirit" for improving facility appearance.

An audit and evaluation team has been established with Jack Garrison, chief safety engineer, as chairman. Other members and their departments are T. William Ochodnicky, engineering; Hugh J. McDuffee, operations; John D. Burns, controller; R. David Williams, reliability; Charles H. Stadler, military space programs; Edward W. Manning, launch vehicle programs; Harry Lund, plant engineering; M. F. Moseley, Lindbergh Field, and E. H. Schmidt, Convair Service Center.

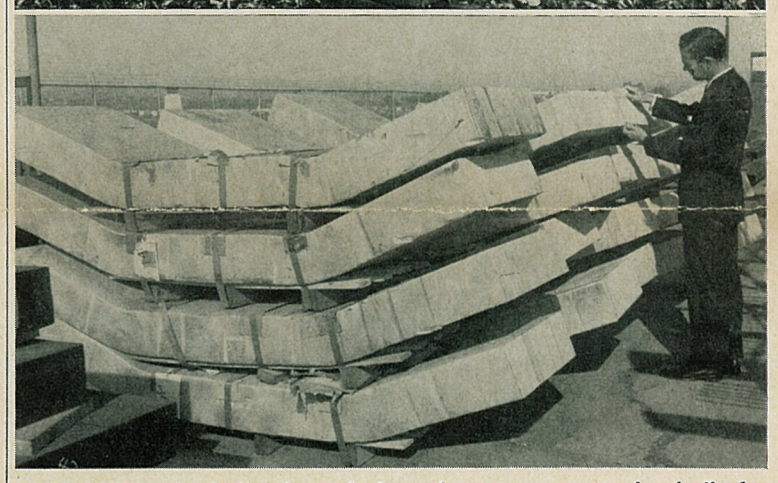
Bryant said inspections will be conducted and departmental standings published monthly.

Each department also is appointing a monitor to provide liaison between employes in the department and plant engineering personnel.

Surveys recently have been completed at Kearny Mesa and Lindbergh Field and recommendations have been made for changes that will improve appearance in several areas. Bryant said problems differ somewhat because of "age" of facilities at Lindbergh Field.

Painting, refinishing of floor tile and refurbishment of venetian blinds is now under way. Work at Lindbergh Field will in-

(Continued on Page 2)



OUTSIZE—As indication of size of components to be built for C-5 (top photo), L. W. Kirkendall, Convair numerical control tape proofer, mills 1,000-lb. stainless steel forging into side brace fitting for empennage pivot section. Forging is one of largest ever to be milled at Convair. In lower photo, Don Stewart, C-5 contracts administrator, looks over shipment of 16 aluminum forgings recently received in plant. The forgings weigh 1,500 lbs. each. They are destined for center tie box rear spars of C-5 horizontal stabilizers.

Marty Stutz Retained as Head Of CRA For Another Term

Marty Stutz was reseated as president of the Convair Recreation Association Employes' Council for the second term at elections March 13.

Ezra Johnson, vice president, was the only new officer chosen by CRA commissioners for the 1967-68 term. Re-elected by unanimous acclaim were Keith Sears, treasurer, and Evelyne Thrall, secretary.

Stutz, tooling department foreman, is commissioner of the Convair square dance group. He has

(Continued on Page 2)

COUNCIL LEADERS—CRA Council officers elected March 13 for the 1967-68 term are, from left, Evelyne Thrall, secretary; Keith Sears, treasurer; Ezra Johnson, vice president; and Marty Stutz, president.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between March 15 and March 31.

Thirty-year: Dept. 250, W. J. Lawr; Dept. 780, F. B. Kemper; Dept 833, J. C. Ruzich.

Twenty-five year: Dept. 010, H. J. Richardson; Dept. 113, Norrine Hoberg; Dept. 191, J. L. Terrien; Dept. 401, J. W. Harlow; Dept. 452, G. M. Churness; Dept. 519, K. O. Hanson; Dept. 521, K. H. White; Dept. 563, T. H. Brunner; Dept. 579, S. Chavez; Dept. 842, R. C. Ribby; Dept. 957, R. C. McKay.

Twenty-year: Dept. 015, M. A. Ambrose; Dept. 016, L. M. Hunsaker; Dept. 027, J. T. Fenwick; Dept. 131, D. E. Leinweber; Dept. 250, R. F. Geurin; Dept. 820, A. W. Lizarraras; Dept. 832, H. A. Hoch; Dept. 834, H. F. Clark; Dept. 966, A. C. Tejada; Dept. 972, H. G. Jones.

Fifteen-year: Dept. 015, W. E. Reader, J. B. Richard; Dept. 130, O. R. Thompson; Dept. 146, J. R. Frogge; Dept. 250, F. Carrillo; Dept. 401, A. S. Brown; Dept. 420, F. E. Allen; Dept. 460, J. L. Jacobi; Dept. 511, R. W. Spence; Dept. 512, K. A. Morefield, J. G. Willis; Dept. 515, R. C. Kemp; Dept. 518, B. T. Burnett; Dept. 756, R. A. Johnston; Dept. 759, P. R. Adams; Dept. 780, G. F. Koehler, M. B. Murrah; Dept. 841, K. E. Yzelman; Dept. 961, J. O. Brideau; Dept. 962, G. D. Clapp; Dept. 974, R. S. Vernor; Dept. 985, W. W. Elkins; Dept. 988, E. A. Littlefield, F. Rezek.

Ten-year: Dept. 031, E. Meisenbach; Dept. 059, V. L. Carter; Dept. 113, Clara E. J. Adair; Dept. 115, C. J. Dunn; Dept. 130, W. T. McConnell; Dept. 140, Violet S. Miller; Dept. 142, R. A. Dominguez; Dept. 144, S. G. Jenkins; Dept. 145, Leona M. Hoffman; Dept. 170, Susan J. Morrison; Dept. 191, Margaret L. Shirley; Dept. 195, D. T. Paschal; Dept. 250, L. Grandberry, C. F. Nelson, R. R. Russell, G. H. Wolske; Dept. 300, H. J. Wink; Dept. 420, M. G. Maddock; Dept. 491, H. D. Thompson; Dept. 511, G. A. Samuelson; Dept. 512, J. H. Heathman; Dept. 515, Beth Sharp; Dept 518, Frances W. Wendt.

Dept. 524, Geraldine C. Wrighton; Dept. 526, S. Menas; Dept. 533, J. S. Nuding; Dept. 553, D. G. Sliger; Dept. 574, E. H. Jones; Dept. 578, W. G. Michael; Dept. 579, R. G. Sims; Dept. 584, S. E. Aldridge Jr.; Dept. 588, H. G. Krumrei; Dept. 593, N. H. Kennedy; Dept. 595, J. A. Doggett, H. B. Hilton; Dept. 756, J. L. Thornton; Dept. 780, Dixie R. Blommer, Gladys L. Breitenbach, D. J. Pinal, Edith C. Teague; Dept. 810, Marian M. Evans, G. W. Jacobsen; Dept. 832, Thelma G. Dunbar; Dept. 833, A. Leth; Dept. 835, L. S. Sidock; Dept. 840, B. Cano; Dept. 841, E. K. Massey; Dept. 860, R. F. Kisselstein; Dept. 964, Estelle Pfeffer; Dept. 970, Carmen A. Donavon; Dept. 973, M. F. Hart; Dept. 986, J. J. Andrews.

STROMBERG-CARLSON

Twenty-five year: Dept. 80-30, N. J. Barnes.

Ten-year: Dept. 85-70, L. Herink, W. H. Jones, L. E. Steffen; Dept. 87-10, J. E. Clark Jr.; Dept. 87-20, C. L. Creager.

Papers Presented

CONVAIR

MEDLOCK—L. I., Dept. 140-0. "Problem Solving for Reliability Improvement," Reliability Division of the Los Angeles Section of the ASQC 8th Annual West Coast Reliability Symposium, Los Angeles, Feb. 18.

MOORE—O. H., Dept. 578-5. "Testing of Atlas Engine Boots to Flight Environments." ROBERT T. SPENCER, Dept. 578-1. "Development of a Facility for Remote Vibration with Hazardous Cryogens." AIAA/Flight Test, Simulation and Support Conference, Cocoa Beach, Fla., Feb. 6-8.

PETRE—J. W., Dept. 506-0. "Monster Buoys for Offshore Exploration." OECON Offshore Exploration Conference, Long Beach, Feb. 22.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending March 3.

Dept. 001-0, J. W. Weisman; Dept. 059-3, L. L. Young; Dept. 101-4, J. V. Seward Jr.; Dept. 130-2, C. E. Birdsell; Dept. 141-2, W. H. Kirk, K. A. Neas; Dept. 142-1, D. J. Clemens; Dept. 144-2, J. H. Brewer; Dept. 146-4, F. J. Bourgeois; Dept. 149-2, L. B. Muzzy, G. E. Ream; Dept. 250-0, Carl Bruns; Dept. 250-3, N. L. Oftedahl; Dept. 250-5, W. LaFountaine; Dept. 420-1, I. G. Rooder; Dept. 454-0, A. A. Carlson; Dept. 519-0, M. S. McGee; Dept. 759-0, N. B. Byrd, E. W. Ford; Dept. 780-1, J. E. Kelley; Dept. 780-3, F. J. Trout; Dept. 835-1, L. R. Matthews; Dept. 957-0, S. R. Kirchmann, R. R. Reekers; Dept. 964-2, K. K. Eulette; Dept. 973-3, R. E. Lopez; Dept. 979-2, L. E. Van Horn; Dept. 979-3, R. F. Noe.

Employe Suggestion awards approved for the week ending March 10.

Dept. 002, R. C. Beezley; Dept. 015-0, L. W. Tracy; Dept. 031-0, H. D. Hershey; Dept. 049-0, H. J. Komos; Dept. 130-1, D. O. Naill; Dept. 130-5, M. G. Meservy; Dept. 141-2; D. A. Menard, B. W. Pesta; Dept. 143-1, J. S. Adams,; Dept. 143-3, T. L. Anibal; Dept. 143-4, W. A. Folsom; Dept. 144-2, B. R. Hofer; Dept. 146-1, Ralph DeSola; Dept. 170-1, C. A. Otte; Dept. 250-1, R. D. Whaley; Dept. 452-0, R. M. Wright; Dept. 565-0, G. M. Puntar; Dept. 715-0, F. E. Hitchcock; Dept. 731-0, M. E. Cossano; Dept. 733-0, R. E. Reeves; Dept. 744-0, L. P. Raley; Dept. 758-0, O. A. Smith; Dept. 759-0, N. B. Byrd, G. D. Lundquist; Dept. 761-0, H. I. Greenwood, C. W. Neal; Dept. 764-0, T. M. Sammon; Dept. 780-2, E. L. Thorpe; Dept. 833-1, H. B. Stephenson; Dept. 957-0, G. H. Slater; Dept. 979-1, J. T. Hazelgrove, T. J. Skelley; Dept. 979-2, J. A. Knight.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff. Kearny Mesa, ext. 1931. Bldg. 17, Room 7, 8 a.m., Mondays, April 3 and 17. Lindbergh Field, ext. 491. Bldg. 14 auditorium, 8 a.m., Tuesdays, April 4 and 18, for first shift; 4:30 p.m., Tuesday, March 28, for second shift.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY—A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931 Kearny Mesa.

Retirements

CONVAIR

BAKER—Floyd A., Dept. 250-0. Seniority date March 6, 1952, retired March 10.

BARLING—Harry F., Dept. 250-2. Seniority date Aug. 22, 1961, retired Jan. 15.

CONLEY—William K., Dept. 733-0, Seniority date Jan. 30, 1957, retired Feb. 28.

FODOR—Edna Z., Dept. 19-0. Seniority date April 28, 1947, retired March 10.

PATTERSON—Orval H., Dept. 110-1, Seniority date Dec. 17, 1951, retired Feb. 24.

SMITH—Jesse M., Dept. 250-0. Seniority date Oct. 29, 1950, retired Feb. 28.

Personals

CONVAIR

We wish to express our deepest thanks to all our many friends at Convair for the flowers, cards and many acts of kindness during the illness and death of our son, Steve.

J. R. McCarty and family, Dept. 144-1.

* * *

I would like to thank all my Convair friends for the party and gifts which made my 25th anniversary at Convair March 10 a gala occasion. Words can not express my appreciation.

Virginia T. Cannon, Dept. 833-3

* * *

We wish to extend our sincere thanks to the employes of Stromberg-Carlson for the flowers, cards and sympathy following the recent loss of our husband and father, Austin Trovaten. Your kindness in our time of need was both meaningful and greatly appreciated.

Irene Trovaten and family Dept. 8720

Births

NIGRO—Daughter, Virginia Louise, 8 lbs., 8 oz., born March 10 to Mr. and Mrs. L. V. Nigro, Corporate tax attorney, San Diego.

Deaths

CONVAIR

LaBOUNTY—Willard R., Dept. 250-5. Died March 9. Survivors include his wife, Ferne M.

REEDY—Don B., Dept. 544-5. Died March 10. Survived by wife, Helen D.

CAPE KENNEDY

ERWIN—M. C., Dept. 979-6. Died March 12. Survivors include his wife, Maye Louise.

Invention Disclosures

CONVAIR

BOCK—E. H., Dept. 962-3. Disconnect, High Misalignment Capability.

KESSEL—P. A., Dept. 581-5. Quick Conversion Wheel/Skid.

O'ROURKE—N. W., Dept. 966-3. Liquid Propellant Matrix Simulating Solid Propellant.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N.Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Marty Stutz Again President of CRA

(Continued from Page 1)

headed square dancing activities at Convair and the former Astronautics division since 1952.

Johnson, assistant supervisor in tool engineering, has headed both Convair and the former Astro gun clubs as commissioner. He helped organize both gun clubs and lay plans for Gillespie Field range. He headed development of the Astronautics recreation area, putting in one of the first hours of labor on the grounds.

He was president of the ARA Council and vice president two different terms.

Now, Johnson is CRA commissioner for Convair speech clubs, including Toastmasters and Toastmistress clubs.

Sears is commissioner of the Junior Science Club, sponsored by CRA. Mrs. Thrall has served as CRA secretary the last five years.

Officers will be installed at the April Council meeting, according to J. K. Field, chief of employe services.

Class on Materials Planned For UCSD

Dr. N. R. Adsit of Convair's materials research Dept. 572-1 will teach a University of California Extension course on contemporary materials and processes during the spring quarter.

Classes meet 7 to 10 p.m. Mondays beginning March 27 at the La Jolla campus. More information can be obtained by calling Dr. Adsit at ext. 737 KM.

Division's VE Plans Outlined

Accomplishments and future plans for Convair division's value engineering program were reviewed for Defense Contract Administration Services (DCAS) and Air Force Space Systems Division (SSD) representatives in a meeting at Kearny Mesa.

Jack L. Bowers, Convair general manager, gave introductory remarks and Grant L. Hansen, vice president-launch vehicle programs, spoke.

E. D. Heller, manager of cost reduction and value control, reported that the division saved $5,902,400 from value control efforts last year and has a $6,074,100 savings goal this year.

Heller discussed the value control organization, reviewed the division's major government contracts that have VE incentive clauses and presented information on previous workshops, team studies and VE engineering change proposal submittals.

Plans for 1967 call for two VE workshops, six value analysis of management practices workshops, 16 VE team studies, initiation of 22 VE change proposals and continuous participation in design reviews.

H. P. Williams, chief of value engineering and design services, discussed VE studies last year that resulted in five per cent savings on the F-106 in-flight refueling system and reduction of oceanographic buoy hull parts from 637 to 96 for 40 per cent cost savings.

Present were P. I. Harr, Corporate director of reliability, quality control and value control; J. D. Milling, Convair division controller; Col. J. R. Ourand and Lt. Col. G. D. Fairbanks of DCAS plant representative's office at Convair; Maj. Richard Wolfsberger, chief of SLV-3 engineering for SSD; Leo Shenk, value engineering monitor for DCAS Los Angeles Region headquarters; Edward O'Brien, SLV-3 value engineering monitor for SSD; and John Cianciarulo, value engineer support engineer for DCAS plant representative's office at Convair.

* * *

FOUCH ATTENDS SAVE WORKSHOP

Thirty Convair division representatives participated March 8 in an informal workshop on contractual aspects of value engineering at which George E. Fouch, Deputy Assistant Secretary of Defense (Equipment Maintenance and Readiness), was a guest and answered questions.

The workshop was sponsored by the San Diego chapter of the Society of American Value Engineers (SAVE). H. P. Williams, chief of value engineering and design services for Convair, was chairman.

About 20 division representatives also attended a banquet at Kona Kai Club in Fouch's honor. He spoke on "Value engineering — a managment tool to reduce costs without impairing function or quality."

Housekeeping Key To Clean-up Drive

(Continued from Page 1)

clude external structure repair and rehabilitation of lighting, electrical, water and fire protection systems.

An improvement program also is planned for the Harbor Drive Test Site.

"The new clean-plant program will require everyone's cooperation," Bryant said. "We have a good crew of janitors but we tend to criticize their work. We need to know what their job is and what our responsibilities are."

LOCKHEED REP NEARS 'BIRTHDAY'

Mel Thurmon, Lockheed-Georgia Co. source inspection representative, rounds out his fifth year at Convair next month. Thurmon came to San Diego from Marietta, Ga., in April, 1962, as production started on C-141 empennages. He now is continuing with the C-5 program.

★ Did You Know? ★

(General Dynamics people enjoy numerous advantages and high on the list are those usually referred to as "employe benefits." There are many of them, each designed to complement the others and together form a balanced program for the welfare of the individual. As a reminder, GD/NEWS is carrying a series of brief articles touching upon first one benefit and then another. Some, perhaps, you may not have known existed.)

★ ★ ★

Each employe who retires receives a $1,000 Company-paid life insurance certificate as part of his retirement benefits. Employes with five or more years of continuous service may retire as early as age 55, with Company consent.

Full "vested" interest in the retirement plan is attained after 10 years continuous service and age 40. "Vested" means that even though the employe leaves the Company in the meantime, at age 65 he will receive the retirement benefits he had earned up to the time he terminated. (He may elect to receive lesser benefits at an earlier age if he desires.)

COST REDUCTION HONORS—Convair division perpetual "maximum value performance" cost reduction trophies were awarded recently for February. W. L. Van Horn, Lindbergh Field plant manager, seated, received division award for Lindbergh Field operations. Departmental awards and individuals accepting for functions included, left to right: Research and engineering—engineering test facilities Dept. 578-0, Phil T. Gardner; reliability control—reliability control administration Dept. 140-0, Paul Benner; operations—production engineering Dept. 402-0, William D. Reed; industrial relations—professional placement Dept. 130-9, John J. Tannone; material—material contracts Dept. 802-0, William G. Evans; finance—general accounting Dept. 191-0, John J. Jodka; launch vehicle programs—Eastern Test Range operations Dept. 979-0, James D. Webber. Not present for photo was A. T. Landry, assistant foreman of Dept. 031, experimental, departmental winner at LF.

Check Lists and Alarm Bells Added in Vehicle Safety Push

Convair's transportation Dept. 250-5 has adopted an airlines procedure in an effort to eliminate unsafe "incidents and accidents."

Drivers now have a checklist—similar to that used by pilots for pre-flight check — for review before operating any powered vehicle.

John F. Speed, general foreman for the department, said separate checklists have been printed for highway-type vehicles, cranes and forklifts.

The checklists, posted in conspicuous places on all vehicles, list items to be noted both before and during operation. Copies, laminated in plastic, also have been distributed for each driver.

E. D. Bryant, vice president-operations, said: "Safety for yourself, safety for others and safety from accidental damage to property and equipment can only be realized by personal attention to your every move in doing your daily tasks."

Alarm bell devices are being installed on rear wheels of all portable cranes and semi-trailer equipment and will ring as a warning when vehicles move in reverse.

Forklifts have been equipped with hooks on each side of the mast and chains for use in holding or stabilizing loads.

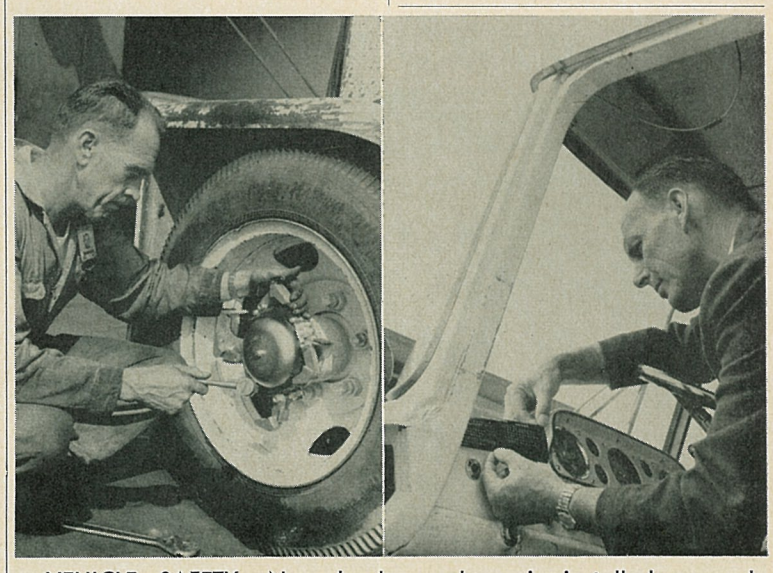
Cables and slings used by transportation and other plant engineering department personnel are being checked for damage monthly.

Insurance Premium On Dependents Given

As the April 15 deadline nears for sending in 1966 federal income tax returns, Convair employes are reminded again that if they itemize medical deductions they may deduct premiums for dependents' insurance.

Deductible amount is $2.89 a week for the 39 weeks from Jan. 1 through Oct. 2, 1966, and $2.68 a week for the 13 weeks from Oct. 3 through Dec. 31. Total for the entire year is $147.55.

Amount withheld from employes' paychecks for California Disability Insurance can be deducted as a tax. This is one per cent of the first $7,400 in earnings or a maximum of $74.



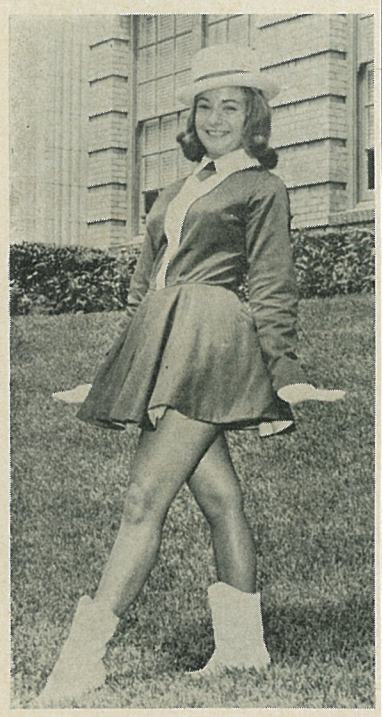
VEHICLE SAFETY—New back-up alarm is installed on axle flange of portable crane (left photo) by K. H. Alderman, automotive mechanic in Convair transportation Dept. 250-5. At right, W. C. Downs, assistant foreman, applies "check list" decal to truck dashboard. Other new safety procedures were instituted recently by transportation.

Expert Lip Reader

Hearing Loss Fails to Faze Pretty Dynamics Daughter

By DONNA KNOX
(Reprinted by permission of the Longview, Tex. Morning Journal)

A lip-reading Longview High School girl is not letting hearing difficulties keep her off the honor roll or prevent her from excelling at precision dancing to music she cannot hear.



IN STRIDE—Nancy Menefee, daughter of J. D. Menefee of Daingerfield Facility, is on high school honor roll and excels in dancing despite hearing problem.

Pretty Nancy Menefee, 17, daughter of Mr. and Mrs. James D. Menefee (he is a General Dynamics engineer at Daingerfield Facility), is a typical teenager despite the handicap.

She plays the piano, swims, helps with the housework and sews.

There are, of course, a few problems. If her teacher forgets and turns his back, Nancy is lost on her lip reading.

She has the teenager's reluctance to ask for any special help and seldom requires it. In schoolwork, the biggest problem is narrated films.

Until she was five, her hearing was normal. After that it deteriorated until her alarmed parents had her examined. The doctor confirmed their suspicions. She was deaf in one ear and had little hearing in the other.

"We didn't realize how lucky we were that Nancy learned to talk before her hearing loss," Mrs. Menefee said.

Her parents arranged speech therapy at East Texas State College and she was taken there twice a week for two full years.

Because of her high I.Q., Nancy had learned to read lips by herself, a practice that has served her well throughout her school career.

"She was around eight years old when a hearing specialist told us to count out lip reading lessons, that she had learned this on her own and the best of anyone he had ever seen who was self-taught."

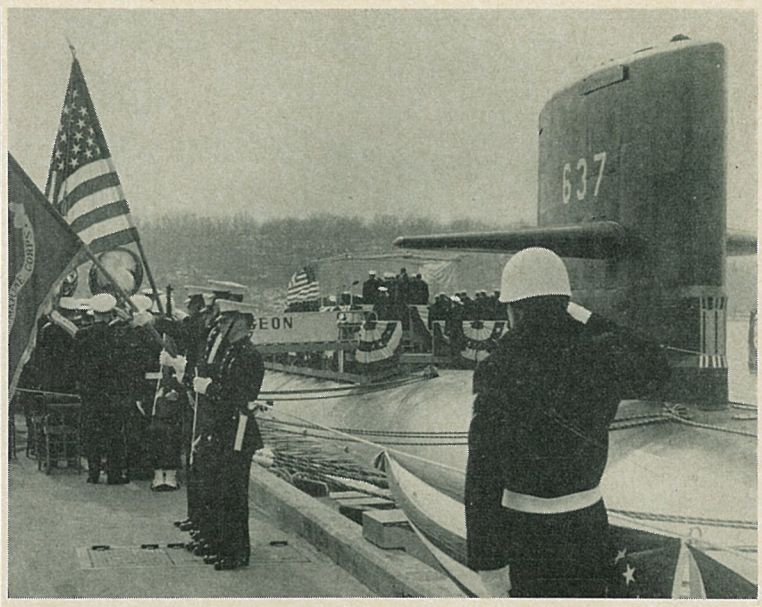
"All of the students have been anxious to help Nancy," said Mrs. Menefee. "She's never found one who wouldn't."

Nancy and her sisters took dancing lessons when they were small. Nancy excelled and her parents finally concluded that it was due to the fact she concentrated so well when the teacher demonstrated the steps.

Nancy enjoys tennis, dancing, and is active in the Horizon group of the Campfire Girls. She has hopes of becoming a doctor or medical technologist and likes chemistry and biology.

One of her sisters, Mary, is a student at Rice, and Nancy hopes to go there.

At present there is little treatment for Nancy's type of deafness. It involves the nerve center in the middle ear. But with new techniques being discovered each year Nancy and her family are hopeful it may just be a matter of time till this, too, is correctable.



LEAD SHIP—USS Sturgeon, nation's newest anti-sub submarine, was commissioned by Navy March 3. The 292-foot, 4,100-ton vessel is lead ship of new class of nuclear attack subs designed to seek out and destroy enemy submersibles and surface ships.

First of New Sturgeon Class Subs Joins Fleet

The lead ship of a new class of nuclear attack submarines, USS Sturgeon, joined the fleet here March 3 as the chairman of the Atomic Energy Commission called for more nuclear-powered naval surface ships.

Speaking at commissioning ceremonies for the new killer sub, Dr. Glenn T. Seaborg said the achievements of the Navy's nuclear surface vessels and advances in nuclear ship technology should "convince those not yet convinced of the wisdom of giving future Navy vessels the many advantages the atom has to offer."

Terming the reliability of naval reactors "remarkable," Dr. Seaborg said nuclear power plants have propelled submarines for 8,000,000 miles "without a mission ever having been aborted because of reactor failure," and attributed this to the Naval Reactors Program under Vice Adm. H. G. Rickover.

The 292-foot, 4,100-ton ship was turned over to the Navy by Electric Boat division of General Dynamics. She is the 25th nuclear submarine constructed by the shipyard.

Command of the new submarine, first of 32 such vessels authorized by Congress, was assumed by Cdr. Curtis B. Shellman Jr., of Waterford, Conn. Sturgeon-class ships are armed with the Subroc missile and are designed to seek out and destroy other submarines.

In his address to about 1,000 guests basking in spring-like temperatures, Dr. Seaborg predicted greater civilian use of nuclear power in the near future.

He said the Atomic Energy Commission was striving to give civilian nuclear power plants the same reliability as naval ones.

"Last year alone saw the sale of nuclear power plants whose combined capacities can supply electricity for more than 25 million Americans," he said.

"We look forward to the continued growth of nuclear power and to the years ahead when it will fill most of America's growing need for electricity.

Nigro Now Director Of Tax Institute

L. V. Nigro, GD Corporate tax attorney at San Diego, has been named a national director of the Tax Executive Institute for the current year. Nigro will represent the Los Angeles chapter of which he has been a member since 1962.

TEI is a national organization of tax executives from corporations and businesses, formed to provide an interchange of information and to promote mutual assistance.

Other General Dynamics men in the organization are J. P. Ross, director of Corporate taxes; T. V. Devins, senior tax accountant; and J. C. Murphy, assistant tax manager, all members of New York chapters.

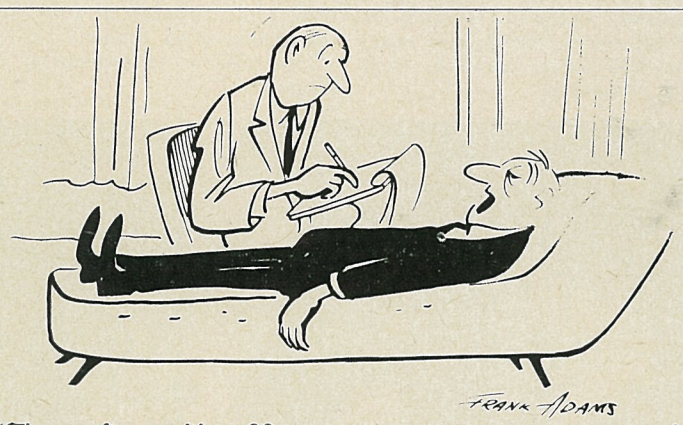
EGGS GALORE—Helping hide eggs for Fort Worth division's annual Easter Egg Hunt is pretty Carol Pendley, Dept. 064-2. Event last year attracted 5,000 youngsters!

People Mobility

Appointments and Transfers

(Following are recent personnel transfers among General Dynamics divisions. In parentheses are dates when individuals joined the company.)

RICHARD H. NICHOLSON (1940) from Convair division to Electronics, San Diego as manager of quality control; **JARRETT Q. FRIEND** (1948) from Convair to project staff engineer, Pomona; **RODNEY N. GALLOWAY** (1960) from Convair to General Atomic; **THOMAS J. P. CAWLEY JR.**, from Corporate Headquarters to Electronics, Rochester as assistant to the director of industrial relations; **EDWARD W. BANEL** (1966) from Quincy to senior quality control engineer, Pomona; **WILLIAM G. DILL** (1954) from Convair to manufacturing analyst, Electronics, San Diego; **WALTER D. MEAD** (1956) from Convair to Stromberg-Carlson, Rochester as manager of production control; **LEWIS FINCKE** (1962) from Corporate Headquarters, to senior financial analyst, Stromberg-Carlson, Rochester.



"Then, after waiting 20 years to get my name on a parking space, they spelled my name wrong . . ."

Quotable Quotations . . .

(From The Notebook of Elbert Hubbard.)

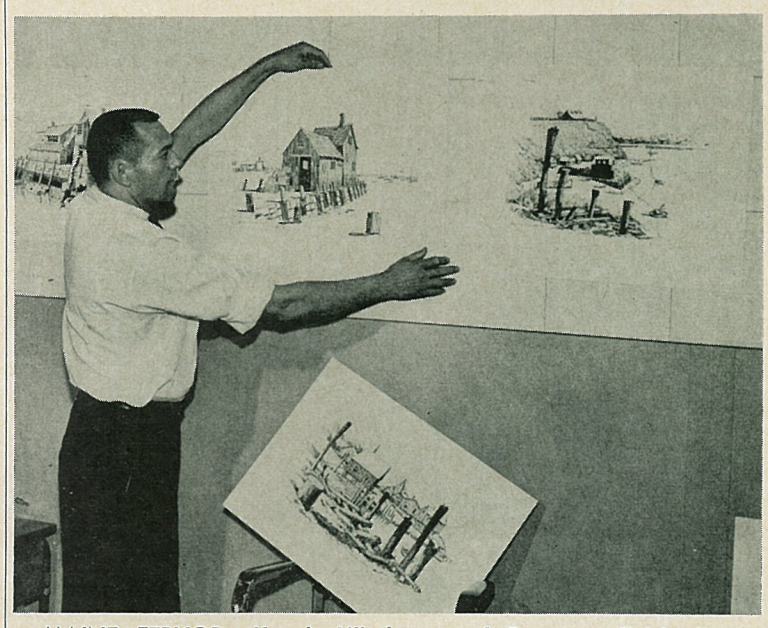
"Responsibilities gravitate to the person who can shoulder them; power flows to the man who knows how."

* * *

"Initiative is doing the right thing without being told."

* * *

"Minimize friction and create harmony. You can get friction for nothing, but harmony costs courtesy and self-control."



MAINE FERVOR—Kragh Lillethorup of Pomona division's engineering illustrations group was so captivated with scenes in New England while on assignment to FDL Project that his spare time was dedicated to photographing and making felt pen drawings.

Ink Sketches Preserve Memories Of Assignment to New England

When Kragh Lillethorup of Pomona division's engineering illustrations group returned home after four months assignment on the Atlantic coast, he brought parts of New England home with him, in the form of 40 felt pen drawings.

Assigned to the Fast Deployment Logistic (FDL) proposal program last October, based at Quincy, Mass., Lillethorup and Lou Arold of the same group took advantage of every spare moment to view the beauty of Colonial America.

Neither had ever been to the East Coast before and they were fascinated by the region, its rugged coast, lighthouses and covered bridges.

"There wasn't time to set up easel and paint, and besides it was too cold, "Lillethorup recalled, "so we used a Polaroid camera. The film helped refresh my memory on details while doing the sketches later. I couldn't bear not to preserve the memory of all that wonderful scenery."

Arold's contribution to the project was essential. You might say he "hatched" the whole thing. When the Polaroid film failed to develop properly in the freezing weather he would take the camera back to the car and sit on it.

"Warmed up, it developed nicely."

GD Man on Board Of Aircraft Assn.

George A. Dies, General Dynamics associate counsel, will represent the Corporation on the board of directors of the Manufacturers Aircraft Association.

Directors for 1967 were elected at the annual meeting of stockholders in New York the middle of this month. The Association administers the patent cross-license agreement for the airplane industry in the United States.

Overheard at Fort Worth division:

Visitor: How come you have so many pretty girls in your department?

Supervisor: I do the hiring.

Mgt. Club to Sponsor Communication Class

"Overcoming Barriers in Communications," a new eight-week course designed primarily for executives and supervisors, will be offered at reduced rate for employes by Convair Management Club and educational services.

Sessions will be from 4:30 to 7:30 p.m. Fridays beginning March 31 in Room C at CRA Clubhouse. Cost will be $10. Employes working on the shift ending at 4:45 p.m. can arrange for early dismissal to attend.

The course, designed by Success Planning Associates, will be taught by Robert L. Pierce, a Grossmont Evening College instructor. Enrollment will be limited to 20 members and registration blanks and course descriptions are available at the club office.

Robert Montague, club management development and education chairman, said the course also may be offered in the near future at Lindbergh Field. Employes there are asked to indicate interest by phoning ext. 3146 KM.

Mgt. Club Offering Audio Training Aids

"The listening post," a new service for managers and supervisors, is being offered by Convair Management Club's management development and education committee.

Robert Montague, committee chairman, said members may check out records and texts from a growing library of audio training aids in the club office. Tape recorders also may be checked out if needed.

Recordings available include narration and simulated interviews on topics such as discipline, performance improvement, orientation, interviewing techniques, appraisal methods and goals.

Mariner-Mars Role Outlined

Plans for Mariner-Mars 1969 missions and the role Convair's Atlas SLV-3C and Centaur vehicles will have in launching the twin spacecraft were outlined by project officials from Jet Propulsion Laboratory in a briefing March 9.

Atlas-Centaur vehicles used will have direct ascent configuration and will be launched from Complexes 36 A and B at the Eastern Test Range. Nose fairings will be almost identical to those for Surveyor spacecraft launches.

Tentative plans call for Convair to conduct match-mate and combined systems tests. Fabrication of spacecraft subsystems is to begin within the next three months.

More than 50 Convair division launch vehicle engineers and others attended the briefing.

Bargain Tickets

(Following are bargain-rate tickets currently available to employes. Unless otherwise stated, they are offered at employe services offices of Convair, Stromberg-Carlson, Electronics-SD, Bldg. 51 engineering mailroom, Lindbergh Field, H. C. Medearis' office at AF Plant 19, and CRA Clubhouse.)

★ ★ ★

"Barefoot in the Park," Circle Arts Theatre, 8:30 p.m. Friday, April 7, $5 and $4. Deadline April 3.

Miss San Diego Pageant, 8 p.m. April 1, Scottish Rite Masonic Center, Mission Valley, $1.50. Deadline March 29.

"Grand Prix," Center Theatre, Mission Valley, 8 p.m. showing, March 30, $2. Deadline March 27.

'Hot Box' Schedule Arranged For Mail

A "hot box" schedule has been set up for speedy pickup and delivery of essential mail at Convair's Kearny Mesa, Lindbergh Field plants and AF Plant 19.

Pickup boxes have been placed at the KM mail room; at LF mail room; and at the southeast corner of LF Bldg. 2; at Plant 19 on the west side of Bldg. 2.

Mail will no longer be carried on inter-plant buses.

The mail truck schedule is: Leave KM mail room at 7, 9:30, 11:30 a.m., 2 p.m. Arrive at Plant 19 at 7:45, 9:45 a.m., noon, 2:15 p.m. Arrive at LF mail room at 8, 10:05 a.m.; 12:20, 2:30 p.m. p.m. Arrive back at KM at 9 at 8:40, 10:55 a.m., 1 and 3:15 p.m.; Arrive back at KM at 9, 11:30 a.m., 1:30 and 3:45 p.m.

Crippled Children Donation Approved

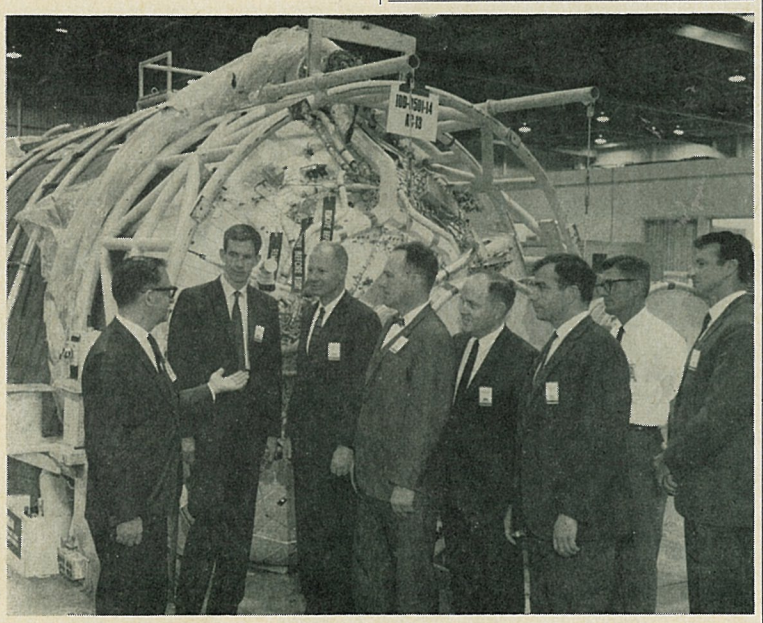
Convair Employes' Con-Trib-Club Committee officers have announced that a recent $5,000 allocation to the San Diego Society for Crippled Children covers payment for Easter seals received by all Con-Trib-Club members.

The committee in its last meeting, at request of the Florida employes advisory committee, pledged $10,000 to the Brevard United Fund and granted $3,000 to the Brevard chapter of the YMCA and $500 to the Canaveral Heart Association.

Other allocations were $1,750 for the San Diego Chapter of the Arthritis Foundation, $500 for the Myasthenia Gravis Foundation, Inc., and $300 for the Boys' Club of South Bay for an athletic field lighting system.

Pen and Pencil Sets On Sale at $1 Each

Convair employe services outlets have Convair monogrammed pen and pencil sets on sale at $1 each, money clips with the CRA eagle emblem at 50 cents each and launch vehicle key rings at 75 cents each.



FLIGHT PLANNERS—Project officials for Mariner-Mars '69 missions from Jet Propulsion Laboratory discuss Centaur role during recent visit to Kearny Mesa plant with Robert Benzwi, left, and Thomas Hutchinson, second from right, of Convair. From left, they are C. E. Kohlhase, H. M. Schurmeier, Dr. J. A. Stallkamp, H. W. Norris, Dr. P. K. Eckman and V. R. Galleher.

Nicholson Appointed Quality Control Mgr. For Electronics-SD

R. H. Nicholson has assumed the position of manager of quality control at Electronics-San Diego operations according to D. C. Prim, general manager.

R. H. Nicholson

Nicholson, who has been with the Company 27 years and held top reliability control posts with both Convair and the former Astronautics division, succeeds the late Kent Sinclair in his present position. He reports directly to Prim.

He joined Convair San Diego in July, 1940, in field operations. Transferring to reliability control the next year, he rose to inspection supervisor for final assembly and experimental. He also was FAA designee for Convair during licensing of the Convair-Liner series and the T-29.

He joined Astronautics when it was formed in 1957 and was based at Cape Kennedy for five years as chief of reliability control. Altogether, he was in charge of reliability control for 107 Atlas launches.

Returning to San Diego in 1962, he has been based at the Kearny Mesa plant since, first as chief of quality control for space launch vehicles, and most recently, as chief of off-site reliability control for Eastern Test Range and Vandenberg AFB.

Construction Dating From 30s Removed

A major part of the northwest mezzanine in Lindbergh Field plant's Bldg. 1 has been removed to make way for new equipment needed in the C-5 program.

San Diego Wrecking and Salvage was low bidder on the materials.

Torn out was the north 80 feet with steel uprights, girders, and joists, built when the building was constructed in the 1930s and the 145 feet of wooden construction added during World War II.

The same company also is clearing the east bay toward the north end of Plant 19's Bldg. 1 to make room for profiling mills and routers.

Convair Reliability Functions Combined

Convair division reliability control-failure analysis Dept. 146-1 activities have been merged with launch vehicle programs reliability control-reliability engineering functions.

B. B. Shaffer, chief of reliability engineering, reports to Fred R. Lee, manager of launch vehicle programs reliability control.

R. W. Eichmann has been assigned as group engineer of launch vehicle programs reliability control support, reporting to Lee. He succeeds R. H. Nicholson, who has accepted a new position as manager of quality control for Electronics-SD.

D. R. Nash has been assigned as group engineer of mechanical systems Dept. 958-7, reporting to Shaffer.

Structures Test Lab Holds an Open House

Families and friends of the some 100 employes assigned to Convair structures test laboratory at the Harbor Drive Test Site had a chance to inspect the facility at an Open House Saturday, March 11.

Visitors saw a full-scale F-111 under structural test; F-102 undergoing fatigue tests on the wing; C-5 components under fatigue tests; FB-111 pylon ejection test; and FB-111 tank component test. They also saw the programmer room and offices.

IN PRINT—Convair team of (from left) Griff Williams, Konrad Boekamp, Neil Kane, and Gene Boyd look over Convair nondestructive testing training manuals.

Self-Study Training Manuals Completed, Ready for Market

Nearly five years of hard work and thousands of manhours by a Convair team have culminated in publication of the first self-study manuals for training and qualification of nondestructive testing personnel.

The programmed instruction handbooks are being placed on the market for sale to any industry or government agency.

Convair first began compilation of the programmed material in 1962 under a Corporation-funded study to fill a long-felt need by industry and government for uniform nondestructive testing procedures.

The Convair material became the nucleus for upgraded and revised manuals prepared under a contract from NASA's Marshall Space Flight Center, Huntsville, Ala. The NASA contract, received in summer of 1965, was completed the middle of this month.

The programmed manuals include six sets of books — 18 volumes and nearly 5,000 pages. They are: Introduction to Nondestructive Testing; Liquid Penetrant Testing, Magnetic Particle Testing, Ultrasonic Testing, Eddy Current Testing, Radiographic Testing.

Until now, there has been no uniform basis for qualification of nondestructive testing personnel and no standard information for technicians, operators, or engineers, Konrad Boekamp, quality assurance project manager on the task, said.

Boekamp is now program administrator for Convair's newly-formed nondestructive testing training department within reliability control.

Several hundred inquiries already have been received about the manuals, and two Convair NDT training specialists are now putting on short courses in radiographic testing at Seattle, Wash., Pascagoula, Miss., Bath, Maine, and Bay City, Mich. for the Navy Ships System Command.

Preparation of the manuals was under overall direction of P. I. Harr, now Corporate director of reliability control, and R. H. Gilliland, manager of Lindbergh Field operations reliability control. The writing task was accomplished by technical publications department under Howard Kennedy, manager.

Boekamp credits the all-out effort and teamwork of everyone involved for successful culmination of the project.

Information on the NDT manuals and training is available by contacting Convair, NDT Training, Dept. 149-00, P.O. Box 1950, San Diego, Calif. 92112.

ASTME Honors Robert Bruce

Robert E. Bruce, a tool development engineer in Dept. 403-3 at Convair, has been named "Engineer of the Year" by the 104-member North County Chapter 189 of the American Society of Tool and Manufacturing Engineers.

Bruce joined Convair in the 30s as a burr bench hand and moved up during the years to supervisor. Later he was a process engineer on the Terrier missile program at Pomona division until returning to San Diego in 1955.

★ ★ ★

Three Convair men will be installed as new officers of the chapter. They are Joseph H. Mang, Dept. 491-0, second vice chairman; Lewis M. Whitney Jr. of Dept. 403-1, fourth vice chairman; and John Weiland, Dept. 452-0, treasurer.

'General Dynamics' Topic For Speaker

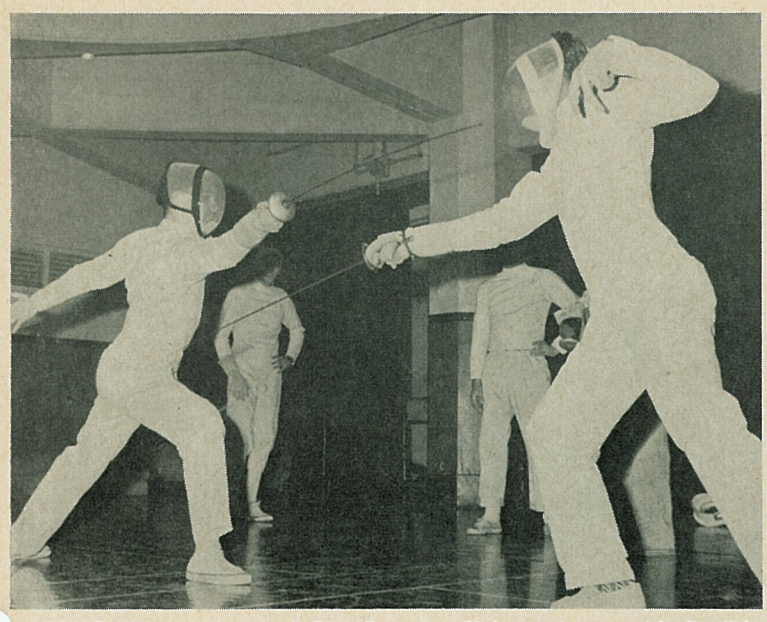
"General Dynamics, Today and Tomorrow," will be the topic of John A. Sargent, General Dynamics vice president of finance, at tomorrow's (March 23) Convair Management Club meeting. Ladies and guests are invited.

Corporate annual reports for 1966 will be distributed.

Meeting will be in the H.M.S. Bounty Room of the Hilton Inn with social hour beginning at 5:30 p.m., followed at 6:30 by a top sirloin steak dinner.

Controller's departments are sponsoring.

ENGINEER OF YEAR—Robert E. Bruce of Convair Dept. 403-3, left, tries pen from set presented in recognition of selection as "Engineer of Year" by Chapter 189 of American Society of Tool and Manufacturing Engineers. Holding set is James C. Duffy, Convair supervisor for manufacturing development, chapter chairman.



TOUCHE—Members of CRA Fencers Club work out with flexible foil during practice session. New 10-week courses for beginning, intermediate and advanced fencers begin March 31 under club sponsorship.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111, Kearny Mesa. Deadline for next issue of GD/News is March 29. Call ext. 1071 LF or 3322 KM.)

* * *

ARCHERY—Meeting March 29, 7:30 p.m., CRA Clubhouse, Room A.
BADMINTON—Play Monday, 7-10 p.m., Federal Bldg., Balboa Park.
BONAIR FLYERS—Meeting April 4, 7:30 p.m., CRA Clubhouse.
BOWLING—Entries open for CRA plant championship tourney. Forms at employe services outlets.
BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.
CERAMICS—Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.
CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.
COINEERS—Installation dinner March 25, 7 p.m., Bahia.
CONVAIRIDERS—Ride to Otay Mesa March 25. Meet at 8 a.m., at Bank of America, Sweetwater and Jamacha Rds.
FENCING—Instruction classes begin March 31, YWCA, 10th & C Sts. Call Mike Hurley, ext. 1054 KM.
GARDEN CLUB—Meeting April 5, 7:30 p.m., Floral Association Bldg. Spring rose show April 16.
GOLF—Sign-ups taken March 23 to 31 for monthly tourney, April 8-9, at Coronado. Call ext. 1111 KM.
ICE SKATING—GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.
PISTOL CLUB—Next regular club shoot April 9.
RADIO CLUB—Meeting April 6, 7:30 p.m., CRA Clubrouse.
ROAD RUNNERS—Meeting March 23, 7:30 p.m., Gillespie Field.
SKI CLUB—Trip to Mammoth Mt. April 7-8. Meeting April 4, 8 p.m., Catamaran Hotel.
TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.
TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.
WOMEN'S GOLF—Next tourney April 8 at Tecolote Canyon course.

Coineers to Install Watt as President

Jim Watt will be installed president of CRA Coineers at a 7 p.m. dinner meeting this Saturday, March 25, at the Bahia restaurant, Mission Bay.

Other officers to be seated are F. B. Wagner, vice president; Rosemary Jankowski, treasurer; and Ed Raymond, secretary.

Larry Sweeney will be master of ceremonies and Pete Mitchell, long-time Convair employe and now a coin shop operator, will give Coineers "A Look at the Coming Year in Coins."

General Accounting Makes School Gift

Members of the accounts payable section of Convair's general accounting Dept. 191-0 have purchased a new wheel chair as a gift for Sunshine School, an elementary school for retarded children on Kearny Mesa.

The purchase was made from funds accumulated from sale of donuts and other baked goods brought in by members of the section during the past year. The accounts payable section made $150 contributions in 1965 and 1966 to the San Diego Children's Home Association for use in its programs for retarded youth.

168 Average Bowler Soars to 277 Game

Phil Shepard, Dept. 059, extended himself early this month to bowl a 277 game at Frontier Lanes where he bowls on Thursday nights with the Electronics Mixed Handicap League. Shepard's average is 168.

Rose Growers Prep For Upcoming Show

Convair rose growers are nurturing their blooms for the CRA Garden Club's annual spring rose show, set for Sunday, April 16, this year in the Floral Association Bldg., Balboa Park.

Best of show will be awarded "queen of show," best three hybrid teas or grandifloras, best grandiflora and floribunda, best three grandifloras and floribundas, best arrangement, best corsage, and best children's entry.

Ribbons will be awarded in 56 classes of roses. Other divisions include arrangements, corsages, children 5 to 11 years, and 12 to 16 years. All roses must be grown by the exhibitors.

Entries will be accepted from 7 to 11 a.m. on show day.

Mary Ransom Tops Flight A Golfers

Mary Ransom took Flight A trophy and Betty Jackson, Flight B at the GD Women's Golf Club's March 11 tourney at Singing Hills.

Other Flight A winners were Agnes Sliger, Doris French, Freda Magargal. Flight B runners-up were Lorene Waldon, Doris Parker, Barbara Bugbee.

Winning golf balls for shooting par on No. 8 were Barbara Bugbee, Gerry Swanson, Clara Granat, Mary Ransom, Margaret Clark, Mary Salisbury, and Edie Mellett.

Next tourney will be April 8 at Sam Snead's Tecolote Canyon Course. First tee-off time will be 8 a.m.

Myke Dickey Elected Bike Club President

CRA Bicycle Club members adopted a constitution and elected officers March 13. Officers are Myke Dickey, president; Joe Olander, vice president; Charles N. Cearley, secretary, and Al Brown, treasurer.

The club has a 50-mile Otay Mesa ride scheduled Saturday (March 25). Members will meet at 8 a.m. at the Bank of America, Jamacha and Sweetwater roads, Spring Valley, and will make the tour on 10-speed bikes.

Annual Style Show Will Be at Grant

Industrial Recreation Council's annual fashion show for men and women of all member industries is set for April 26 at 6:30 p.m. in the Palm Room of the U.S. Grant Hotel. This year's show is based on the theme, "San Diego Swings for Spring." Tickets at $1.50 for the show and dessert only, or $4.50 for the show and dinner, are on sale at all General Dynamics employe services outlets.

ARCHERS TO MEET NEXT WEDNESDAY

Archery fans will meet next Wednesday, March 29, in Room A, CRA Clubhouse, at 7:30 p.m. to formulate plans for the coming year, said Commissioner Al Stone. Officers will be elected.

Pistol Teams Defeat Solar

Three four-man Convair Pistol Club teams tallied a combined total of 3,356 out of a possible 3,600 points to defeat three Solar teams in a .22 calibre 25-yard Camp Perry police course competition March 12 at the San Diego Police pistol range. Combined scores for the three Solar teams totaled 3,110.

Warren Ranscht of Dept. 967-3 was high individual with 297 out of a possible 300 points. Two Convair teams placed ahead of Solar's first team and Convair's third team placed fourth.

Individual trophies were awarded members of the winning team — Convair Team 1. Team members, in addition to Ranscht, and scores were J. S. Knutson, Dept. 780-2, 291; Joe Williamson, Dept. 401-5, 289, and Roland Schneider, Dept. 401-1, 289.

Convair's Team 2 members and scores were Roscoe Anderson, Dept. 578-5, 291; Jim Halfacre, Dept. 041-0, 285; Dale Young, Dept. 015-0, 276, and Bill Dittmann, Dept. 951-1, 272.

Members of Team 3 and scores were Angrim Carlson, Dept. 978-1, 277; A. E. Kampman, Dept. 143-3, 267; Bill Worthington, Dept. 519-1, 267, and Dick Sutton, Dept. 961-7, 255.

Dave Farrelly of Dept. 572-1 was range master and referee.

The club's next match will be at 9:15 a.m. April 9.

Aug. 12-24 Selected For Mexico Tour

Dates for the annual CRA-sponsored tour to Mexico for General Dynamics people have been set for the two weeks from Aug. 12 through Aug. 24.

Jim Hardison, Convair Dept. 113-0, will conduct his seventh summer tour. Transportation is by air-conditioned Pullman car from Mexicali to Guadalajara, Mexico City, and by bus to Taxco and Acapulco. Price is $385 a person for round-trip transportation, de luxe hotel accommodations, most meals, and sightseeing.

Interested people may contact Hardison at his home phone, 276-5805, for information. A meeting will be set later this spring to show movies from previous trips and to brief anyone interested. A short course in tourist Spanish will be held again this summer, under CRA auspices, specifically for the GD travelers.

Fencers Club Plans 10-Week Courses

CRA Fencers Club will offer 10-week courses for beginning, intermediate, and advanced fencers beginning March 31 in YWCA gymnasium, 10th Avenue and C Street, in conjunction with the San Diego Fencers Club.

Beginners will meet at 7:30 p.m. and intermediate and advanced fencers at 8:30 p.m. Cost will be $10 per person (or $1.50 per single session). Foil is the beginning weapon with epee and saber instruction offered advanced students.

Alvar Hermanson, a former associate professor at the University of Chicago, will instruct.

He holds a certificate of merit from the Amateur Fencing League of America and fencing masters' diplomas from both the United States and Sweden.

Further information can be obtained from Mike Hurley, club commissioner, ext. 1054 KM.

Road Runners Join Travelers on Trip

Road Runners and Travelers joined to mark anniversaries of both trailer groups with a weekend outing to Ocotillo Wells March 11-12.

Road Runners had 29 people attending in 10 units. Twenty-three Travelers traveled in eight units. Rides over the desert in sand buggies and a Saturday night potluck followed by movies and bingo kept the trailerites entertained.

STAMP CUTTING—Earl Manor saws through stack of envelopes, in jig, to cut off stamps for CRA Rockhounds drive while wife, Ann, and Co-Commissioner Fred Baugh look on. Boxes contain at least 10,000 still to be cut. Stamps provide money to feed needy overseas.

Rockhounds Collect Stamps To Raise Money For Needy

CRA Rockhounds are asking other Convair groups to help collect stamps for the benefit of the needy and sick.

All gem societies belonging to the American Federation of Mineralogical Societies join in sending cancelled stamps to the association which sells the commemorative and unusual stamps to supply government surplus food to needy families and orphanages overseas. Five hundred commemorative stamps buy 300 lbs. of food.

The common stamps are sold at 10 cents a pound for extraction of the die. Proceeds go to cancer research.

Ann and Earl Manor, who spearhead collecting and sorting, make regular pick-ups at business houses, offices, and banks in the Helix and La Mesa area. Over 5,000 envelopes a month are collected, in addition to all donated regularly by Convair employe services offices and club members.

Manor, retired last year from Dept. 961-4, saws common stamps from their envelopes, 150 at a time. Mrs. Manor has the chore of cutting the rarer stamps off by hand, sorting them, and bagging them in plastic envelopes for shipment. They estimate that 6,000 commemorative stamps, or enough to provide 1,800 lbs. of food, have been collected by the club since last September.

The CRA group, in a separate drive, also collects Betty Crocker coupons for the federation's scholarship fund.

Anyone with stamps or coupons to give, is asked to send them to Co-commissioner Fred Baugh, mail zone 143-30.

Convair Golfers Play In Norton Tourney

Bob Aaberg, Convair Dept. 950-5, and Capt. Leo Koerkenmeier, BSYD, teamed for a best ball net of 62 to win the Sixth Greater Norton AFB Invitational Golf Tournament Feb. 25.

A record field of 48 played the course at Sobaba Springs Resort in the events, sponsored by Convair employes at Norton.

Aaberg's net 69 was best individual score.

Among Convair men journeying to the tournament were Charles Ames, vice president of advanced programs; Bill Van Horn, Lindbergh Field plant manager; Chet Dunn, ABRES program general manager; Bob Daly, Kearny Mesa factory manager; Aaberg of ABRES program office; Don Fagan and Denny Barber, Vandenberg AFB.

Bowlers Signing up For Championships

Entry blanks are available this week at employe services outlets for the annual CRA plant bowling championships the last two weekends in April at Pacific Recreation.

Team events will be held April 22-23 and singles and doubles, April 29-30. Team squads will start rolling at noon, 3 and 6 p.m. Doubles will start at noon, 2:30 and 5 p.m. each day.

Teams will consist of either five men, or three men and two women for mixed.

Entry fees are $2.50 for each event entered and $1 extra to be eligible for all-events.

Entries will close April 14.

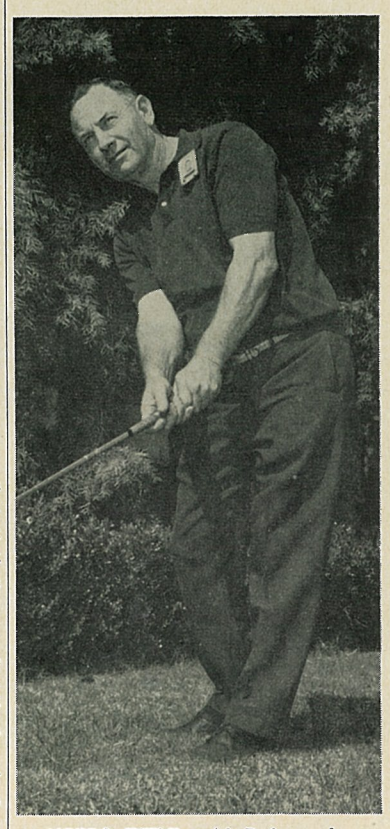
Reiter Again Golf Champion

Al Reiter, Dept. 015-0, one of CRA's most consistent golf winners, fired a 73 in the finals of the Convair plant championship to down Pete Melis, Dept. 987, and win his fourth title in five years.

The match play tournament was played over three weekends at Chula Vista.

Bill Whitley, Dept. 584, won the second flight, with Art Braidic, Dept. 102, runner-up. In the third flight finals Bill Geopfarth, Dept. 553, defeated Scotty Rutherford, Dept. 041. Fourth flight winner was Tom Lazos, Dept. 574, with Aaron Roberts, Dept. 451, runner-up. Bill Silineck, Dept. 015, won the fifth flight, defeating J. D. Beamer, Dept. 420.

Next CRA monthly tournament will be April 8 and 9 at Coronado. Golfers may sign for starting times tomorrow (March 23) through March 31 by calling ext. 1111 KM.



KEEPS TITLE—Al Reiter shows form which helped him win CRA golf championship for fourth time in five years.

Re-Entry Vehicle Maneuvers Successfully on Space Trip

Atlas SLV-3 No. 7002 lifted the U. S. Air Force's second PRIME vehicle into space March 5 and released it toward earth for its successful maneuvering re-entry flight down the Western Test Range.

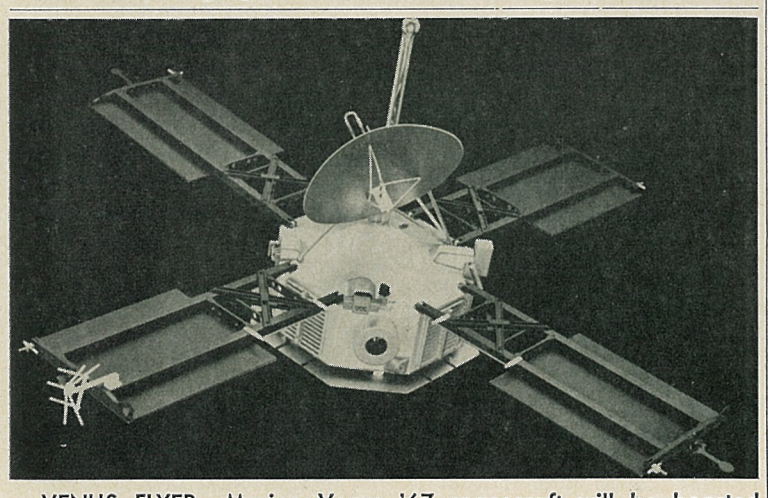
Howard Bonesteel, PRIME program manager for Convair, said the Atlas lifted off Space Launch Complex 3E at Vandenberg AFB about 3:05 p.m. and released the wingless re-entry craft about 5½-minutes later. The Atlas then was "backed off" with retro-rockets.

Among Convair personnel at Vandenberg for the launch were Grant L. Hansen, vice president-launch vehicle programs; Richard W. Keehn, Atlas SLV program manager, Bonesteel, H. L. Obertries and James L. Minos of the Convair PRIME program office. Howard Pearson was launch conductor.

"We were pleased with the performance and particularly with the new shroud and interstage adapter," Bonesteel said. "We also obtained 139 of 140 desired telemetry instrumentation measurements from the flight."

The PRIME (Precision Recovery Including Maneuvering Entry) SV-5D vehicle, built by Martin Co., performed pre-programmed maneuvers during its downrange flight. The vehicles use nitrogen gas jets outside the atmosphere and airplane-type flaps in the atmosphere for maneuvers.

Officials said the flight demonstrated that the SV-5D vehicle is aerodynamically stable in flight. Its heat shield and guidance and control systems performed as expected.



VENUS FLYER—Mariner-Venus '67 spacecraft will be boosted into space by Convair's Atlas SLV-3 No. 5401 in June.

Atlas SLV-3 Shipped to ETR For Mid-Year Mariner Launch

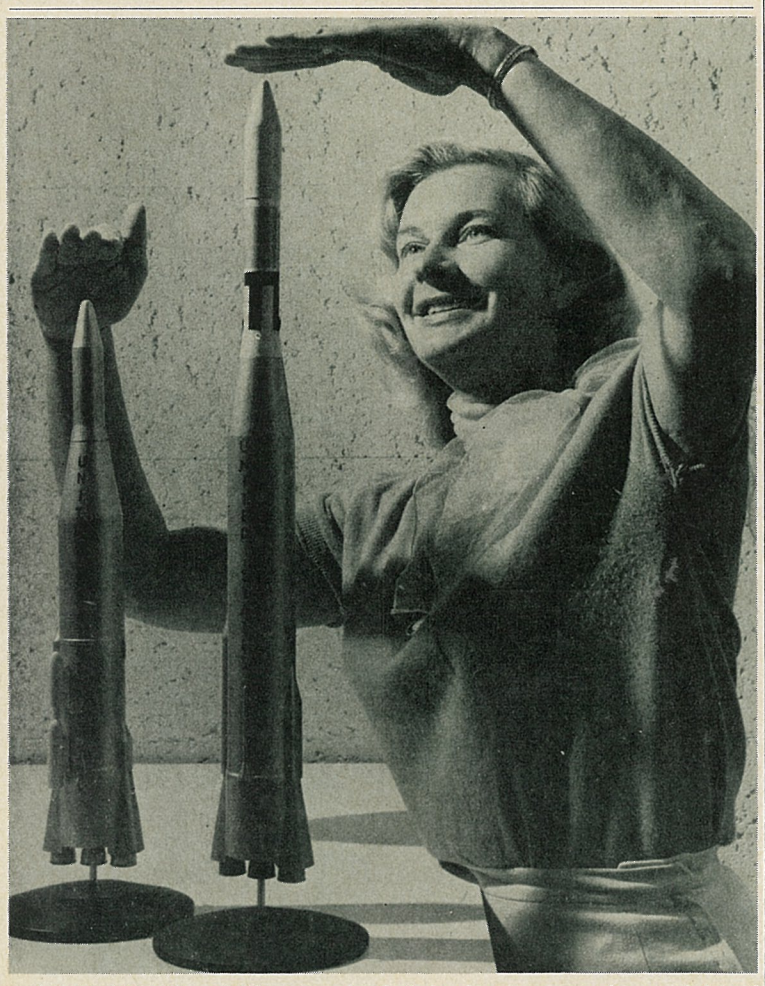
Convair's Atlas SLV-3 No. 5401 has been shipped to the Eastern Test Range, where it will be mated with an Agena D and readied for a mid-year launch that will send a Mariner spacecraft to rendezvous four months later with the planet Venus almost 50 million miles from earth.

Jim Von der Wische, Convair program manager for NASA SLV-3 programs, said the Mariner-Venus '67 mission will provide "unusual opportunity" for gaining new scientific knowledge of celestial mechanics.

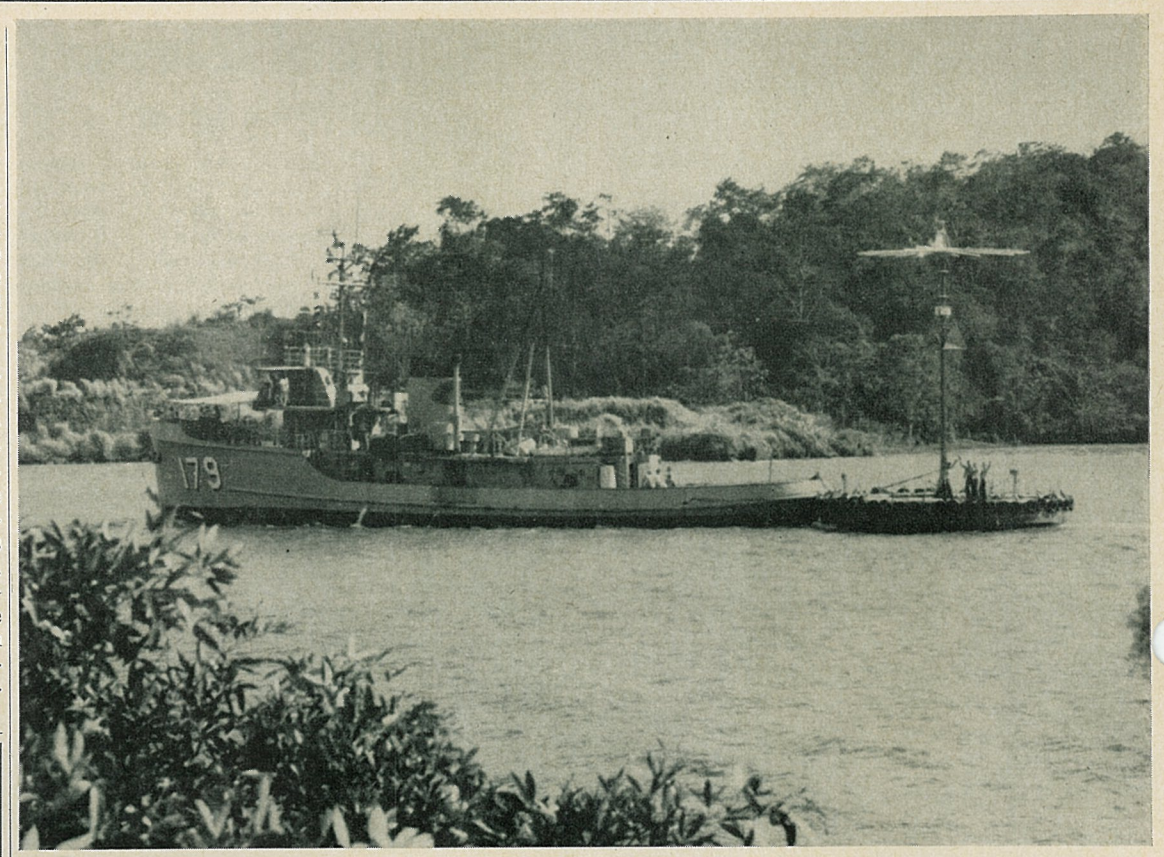
The 550-pound spacecraft will come within 2,000 miles of Venus. This will have a significant effect on its orbit and, after the encounter, will bring it closer to the sun than any previous man-made object.

Experiments will include investigation of the temperature and density of the Venusian atmosphere, strength and direction of the planet's magnetic field, the exact diameter and mass of Venus and a search for radiation belts around the planet.

The Mariner-Venus '67 spacecraft, a "spare" from the Mars probe that has been modified for its new mission, was designed, built and tested for NASA by Jet Propulsion Laboratory.



NEW MODEL—Difference in height between scale models of new Atlas SLV-3A-Agena and older Atlas SLV-3-Agena is checked by Hildy Crosser, administrative secretary for Andrew Kalitinsky, assistant program director-launch vehicle engineering. Atlas SLV-3A, now under development, will have tank 117 inches longer and carry additional 48,000 pounds of usable propellants.



HOMEWARD BOUND — Convair-developed buoy, Bravo, is pulled through Panama Canal by Navy tug Allegheny, en route from Bermuda to home port of San Diego after completing two and a half years of testing in Atlantic waters. Buoy is first oceanographic data-gathering prototype developed by Convair for Office of Naval Research. Photo was snapped near Gamboa and furnished by Panama Canal Information Office, U.S. Southern Command.

'Bravo' Braves High Winds and Waves During 4,500 Mile Tow Trip to SD

Bravo, Convair's first prototype oceanographic buoy, was tied up last Tuesday morning at a San Diego, Calif., pier after a 4,500-mile trip at the end of a 600-ft. nylon towing line.

Lt. Joe Kennedy, captain of the modified Navy tug USS Allegheny which towed the buoy from Bermuda to San Diego, said he wouldn't hesitate in turning right around and taking the buoy back the same route.

Only real threat of trouble on the long voyage was when a heavy storm hit the Allegheny in the Gulf of Tehuantepec off the southwest coast of Mexico. For 30 hours the ship headed into 40 knot winds with 15-foot waves breaking on the bow. Distance between crests was so short the afterdeck of the 140-ft. ship was still awash with one wave when another hit forward. The Allegheny reduced speed to three knots and weathered the storm without damage to either ship or buoy. Top speed during the voyage was slightly over 10 knots, or around 12 miles an hour.

Passage through the Panama Canal was made with little difficulty, too. The Allegheny was allowed to tow its charge through, the first time in the memory of canal officials that a ship had been permitted to take its own tow through the locks. The buoy was made fast to the stern of the ship with steel wire ropes and its own nylon towing line. The only anxious moment, recalled Lt. Kennedy, was when a large ocean liner ahead had difficulty getting lined up to go into one of the locks and the Allegheny had to do some quick maneuvering to keep out of the way.

The Naval ship, now converted to a scientific vessel for oceanographic research work, is under operational command of the Commandant of the Third Naval District, New York, RAdm. G. R. Luker. The ship picked up the buoy at the Naval Operating Base, King's Point, in Bermuda on Feb. 10.

It took 20 days of actual steaming to reach San Diego.

Lt. Kennedy said one of the fringe benefits was the buoy's value as an attention-getter. It attracted large crowds of curious at every stop—and at least half the spectators had heard of the "monster buoy." Refueling and provisioning stops were made at Guantanamo Bay, Cuba; Balboa in Panama Canal Zone; and at Acapulco, Mexico.

The buoy, developed for the Office of Naval Research, has been in the Atlantic since fall of 1964 for testing. It will now be refurbished and fitted with an ocean data acquisition system for scientific work in the Pacific Ocean, said Robert Devereux, Convair ocean data station program manager.

Thicker Fuel Viewed As Key to Reducing Aircraft Fire Peril

Reduction of fires in aircraft accidents and during flight may soon be possible through usage of a new thickened JP-4 fuel.

So said F. P. McCourt, chief of the safety and survivability division, U. S. Army Air Materiel Laboratory at Fort Eustis, Va.

McCourt spoke at Fort Worth division recently to General Dynamics and AFPRO engineering, quality assurance, flight, security and safety personnel. The program was sponsored by W. F. Funk, administrator, division aerospace safety.

McCourt said several types of jet engines have been run on the thickened JP-4 fuel.

He said in one series of flame-propagation tests, one type of emulsified fuel showed a fire reduction of 96.7 per cent and a reduction of flame duration of 85.2 per cent.

Antennas For Communications With Buoy Ready For Action

Long-range high frequency antennas, which will receive oceanographic data from distances up to 2,500 miles, proved that they meet design and performance specifications this month in checkouts three miles from Convair's Lindbergh Field plant.

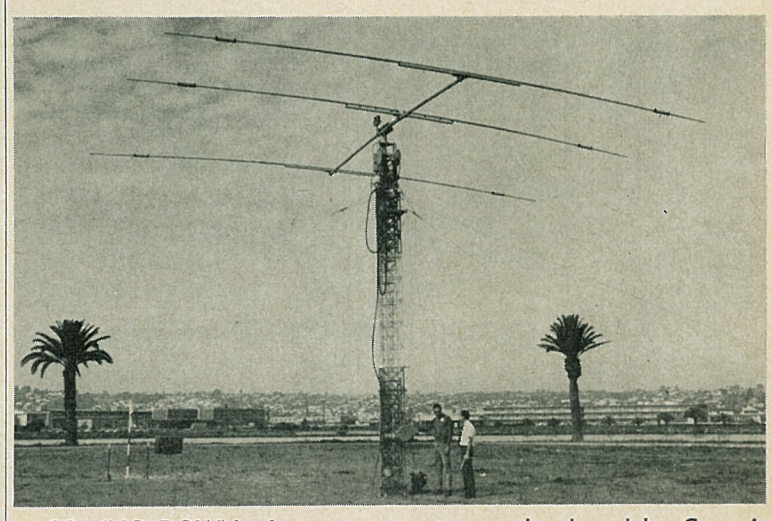
Two 55-ft. high antennas, developed by Convair for use with the Office of Naval Research oceanographic data-gathering buoy program, were checked for radiation pattern, gain specifications, and voltage standing wave ratios before they go into actual use on the West Coast early this summer.

The antennas, one fixed and one free-standing, will be positioned in conjunction with the mobile data center (a converted Greyhound bus) to interrogate and receive data from buoy Alpha. The buoy will be moored in the Pacific Ocean 15 miles off La Jolla, Calif. Long-range telemetry tests will be made at three sites along the coast — Santa Barbara, San Francisco, and Seattle.

The fixed antenna will be attached to a trailer which also carries the diesel engine generator. The free-standing antenna will be located from 600 to 1,000 feet from the data center.

Both antenna towers can be disassembled and stowed on the trailer.

Involved in this phase of the test program were L. A. Scott, test conductor, Al Cappelen, James Lack, Tom Nilson, Darold Smith, John Thayer, engineers, and Dennis Hyland and Jack Heming, engineering development technicians.



COMING DOWN—Long range antenna, developed by Convair for oceanographic buoy program, is lowered by John Thayer and D. K. Smith after recent tests on Harbor Island, San Diego. Antenna, 55-ft. high when extended to full length, is down to 20-ft. section in photo.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 7 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, April 5, 1967

Atlas-Centaur Ready For New Lunar Launch

Convair's Atlas - Centaur 12 stands at Complex 36B at the Eastern Test Range ready to send Surveyor 3 on its way to conduct man's first televised "ground breaking ceremony" on the moon later this month.

The flight will mark the first two - burn Centaur/Surveyor launch, the first Surveyor launch from Complex 36B, and the first Surveyor night launch.

Surveyor 3 will be about 80 pounds heavier than its predecessors and will be the first to conduct scientific soil mechanics-surface sampler experiments.

A scoop attached to an extension arm will dig, scrape and pick up soil. TV pictures of the scoop and its striped markings will show soil penetration depth, soil level in the scoop, and soil grain size.

After Atlas booster and sustainer engines have completed firing, Centaur's two 15,000-pound-thrust liquid hydrogen engines will have a 5½-minute "first burn" to inject the Centaur-Surveyor into a 90-nautical-mile, near-circular "parking orbit."

Two Centaur 50-pound-thrust hydrogen peroxide engines then will settle propellants and circularize the orbit in 76 seconds. Two 3-pound-thrust engines will keep the propellants settled during a 4½ to 25-minute coast (with length of coast depending on launch date). The 50-pound-thrust engines will be restarted 40 seconds prior to Centaur main engines restart.

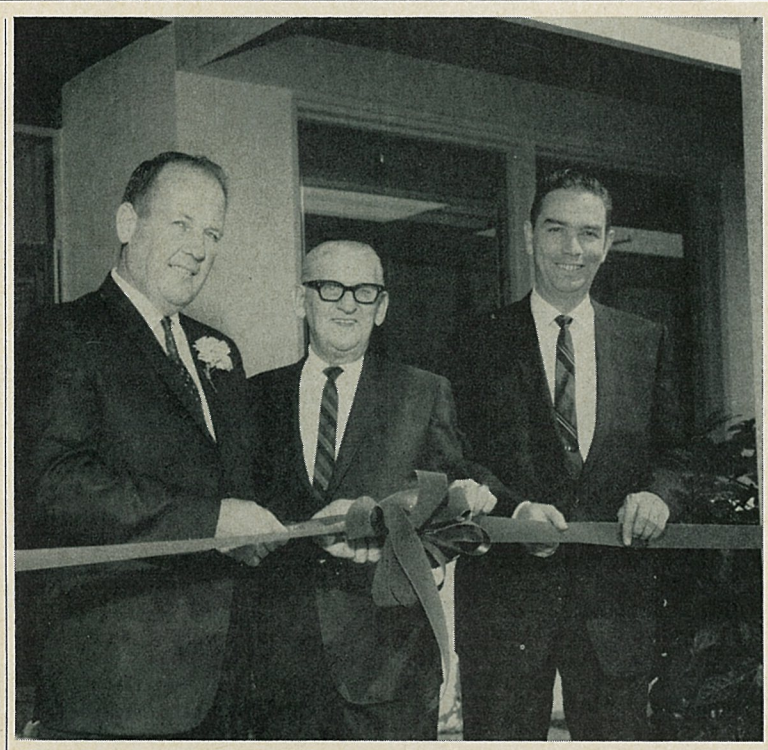
Centaur's "second burn" of about 1.8 minutes will carry it into a lunar transit trajectory. After Centaur engines shut down, the Surveyor's landing legs and antennas will be extended and the spacecraft separated. Centaur then will be turned and its peroxide engines fired again to ensure it will not impact the moon.

The Surveyor will make a mid-course correction about 20 hours after liftoff. At the end of its 66-hour flight, it will be slowed by its retro motor and vernier engines from about 6,000 miles per hour at 60 miles lunar altitude to about 5 feet per second before its landing.

It will "free fall" the last 13 feet with the landing shock absorbed by its landing legs and crushable blocks under its frame.

E. E. "Barry" Barringer is Convair project engineer for the AC-12 flight. Daniel Sarokon is launch conductor with Don Merritt, John Johnson, John Kechele and James Sylvester as assist-

(Continued on Page 2)



RIBBON CUTTING—Al Van Zanten, mayor of El Cajon, cuts ribbon dedicating Stromberg-Carlson Data Products' new facility in El Cajon on March 17. (Ribbon was Kelly green in deference to St. Patrick's Day.) In center is Howard G. Strassner from Rochester, S-C vice president-manufacturing coordinator. At right is J. R. Blattenberger, Data Products controller.

S-C Data Products Opens New Mfg. Facility at El Cajon

Stromberg-Carlson Data Products' new manufacturing plant at 698 W. Main St. in El Cajon was formally dedicated last month in ceremonies attended by El Cajon civic and community dignitaries and Company officials.

Albert Van Zanten, El Cajon mayor, cut the green velvet ribbon (a tribute to St. Patrick's Day) to mark completion of an extensive three-month remodeling program which transformed the former health club building into a modern facility for the S-C division.

Howard G. Strassner, Stromberg-Carlson vice president-manufacturing coordinator, from S-C Rochester headquarters, described the long and meticulous search for a suitable site for the new facility.

"What was just an apple in our eye a year ago is now realized in this fine plant," he said. He went on to say that he and Roy Dieter, Data Products plant engineer, spent six months investigating between 35 and 40 sites in the San Diego county area.

(Continued on Page 2)

Data Processing Wins Top '66 Safety Award

Data processing Dept. 101 was awarded Convair's top trophy for 1966 at the division's annual safety and housekeeping awards banquet last month.

Dept. 101's 230 employes had only 33 points tallied against them in unannounced inspections during the year. The department, with .0127 average points per employe, edged production electronics Dept. 780-1, which had a .0128 average, to take the top award.

Other trophies went to Dept. 985 (Vandenberg AFB) for best off-site safety and housekeeping record and to Depts. 024, 019, 765 and 744 for having completed the year with no "serious medical cases."

Jack L. Bowers, division general manager, presented awards and M. V. Wisdom, director of industrial relations, was master of ceremonies.

Jack W. Garrison, chief safety engineer, reported that division employes worked 26,534,105 manhours during the year with only 12 lost-time accidents.

(Continued on Page 2)

SAFETY AWARDS—Jack L. Bowers, Convair general manager, center, presents top division safety and housekeeping trophy for 1966 to A. E. Andress, third from right, for Dept. 101. Other awards went to Harry Rote for Depts. 024 and 019, P. R. Lewellen for Dept. 756, William Cushman for Dept. 744 and Tony Funaro for Dept. 985. Jack W. Garrison, chief safety engineer, is at right.

Financial Stability Keystone to Success Of GD, Says Sargent

General Dynamics' financial health, its profit growth and stability are the very keystones upon which the Company's successful present and future rest.

John A. Sargent, Corporate vice president-finance, so told a standing room only crowd last month at a Convair Management Club meeting in the Hilton Inn at San Diego.

In a frank and concise appraisal of the problems of aerospace firms, Sargent keyed his talk to "job security."

"Not the security of seniority and pension accumulations," he explained, "but rather the security that comes from collective superior performance in our jobs."

"Since WWII important changes have taken place in the aerospace industry. Transport aircraft and weapons systems have improved dramatically in quality but at the same time they are more costly and complicated and take longer to put together," Sargent said.

"To undertake such programs or to win them in vigorous competition requires highly specialized technologies and unique facilities. Fewer systems have been bought but sound programs last longer, have a higher potential for profit, but involve considerable risk.

"Whether for military or commercial use, time usually is a critical factor, making it essential that the systems contractor maintain an 'in being' scientific, engineering and production capability which is both broad and deep and of the highest quality. Over the long haul, such resources cannot be developed or sustained unless the company is large enough to deal with a variety of major programs in various stages of development on a continuous basis.

"This accounts for the fact that the larger, multi-program companies have tended to grow stronger while those with limited programs have found it increasingly difficult to compete and have tended to decline or turn to some other type of business . . .

"It therefore seems reasonable to predict that the stronger, more diversified, aerospace organizations will gradually strengthen their competitive positions and grow, while those with narrow product bases will find the path increasingly difficult . . .

"This trend is dramatically illustrated by the history of the aerospace industry in Great Britain and France. In England, 11 formerly independent companies by 1961 had boiled down to two. Just recently these two combined. In France, six independent companies have been consolidated into one large entity . . .

"The trend has shown itself in this country: the merger of Boeing and Vertol; Republic, Fairchild and Hiller have merged; and the most recent is the spectacular proposed merger of Douglas and McDonnell . . .

"Quite clearly, the relatively easy days of cost plus contracts are long past. Engineering resourcefulness and quality performance continue to be of high importance, but these now must be coupled with rigidly controlled production capability to assure the profitability of our operations, thereby assuring future security . . ."

Sargent then turned his attention to General Dynamics' position in the industry and the financial community.

"Measured by sales volume in 1966 we were number four in the aerospace group . . . As to income as a per cent of sales, in 1966 we were the leader of the large systems contractors, with 3.3 per cent, followed closely by Boeing at 3.2 per cent . . . All the defense contractors characteristic-

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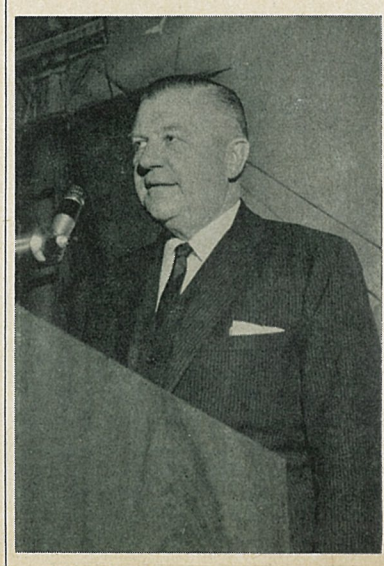


SPEAKER — John A. Sargent, Corporate vice president-finance, is shown addressing Convair Management Club at San Diego.

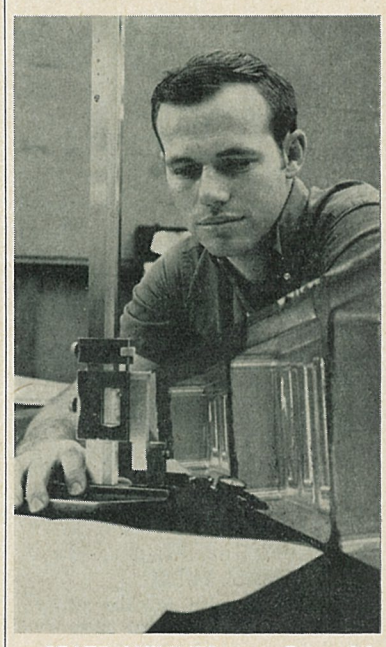
APPRENTICE WINS IN STATE CONTEST

Walter R. Coyle, fourth year machinist apprentice in Convair's apprenticeship program, won first place in the machinist division and second in overall standings in the annual state apprenticeship contest last month in Los Angeles. This is the first time a Convair entry has won.

Competition was held March 16 and 17 in the Great Western Exhibit Center in conjunction with the 1967 Western Metal and Tool Exposition.

Contestants had to machine a part from raw material with a blueprint for guidance. They were

(Continued on Page 2)



STATE WINNER — Convair's Walter Coyle, machinist apprentice, topped all entries in machinist division of annual state-wide apprentice contest last month in Los Angeles.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between April 1 and April 15.

Thirty-year: Dept. 149, C. Wallman; Dept. 250, C. D. Saxon; Dept. 761, R. A. Jacobs; Dept. 835, M. Alianelli; Dept. 860, M. McNally.

Twenty-five-year: Dept. 001, H. Bryant, C. B. Howard; Dept. 031, A. F. Binggeli, A. E. Jones; Dept. 059, H. G. Barnes; Dept. 110, Ruby C. Splinter; Dept. 131, Inez P. Schurr; Dept. 170, J. R. Tucker; Dept. 250, W. T. Toon; Dept. 400, G. K. Watson; Dept. 420, R. Demitrowicz, I. A. Sturdivant; Dept. 566, J. J. Mack, R. J. Wolfe; Dept. 761, J. A. Bethune; Dept. 833, E. Johnson; Dept. 999, L. E. Grigsby.

Twenty-year: Dept. 015, P. R. Evans, T. R. Harris; Dept. 019, L. F. Washburn; Dept. 031, E. L. Lampe; Dept. 101, K. A. Kerr; Dept. 110, Irma M Rutherford; Dept. 149, E. L. Swanson; Dept. 405, W. J. Dawsey; Dept. 533, F. C. Dixon; Dept. 581, F. J. Dore, Jr.; Dept. 595, W. J. Schart; Dept. 733, Nettie M. Pritchett; Dept. 756, L. A. Frankson; Dept. 758, R. Welk; Dept. 762, J. S. Blaha; Dept. 800, L. A. Wood; Dept. 834, J. R. Tierney Jr.; Dept. 950, J. S. Harrison.

Fifteen-year: Dept. 001, Irene P. Baumgarten; Dept. 002, I. Ortiz; Dept. 015, R. N. Moxley; Dept. 016, Eulamae Phillips; Dept. 058, L. D. Harris; Dept. 102, Ruth R. Petit; Dept. 110, Pauline C. Brown; Dept. 143, A. W. Smith; Dept. 144, Margaret M. Poteet; Dept. 149, R. Moore; Dept. 250, C. E. Scholl; Dept. 300, H. D. Pasley; Dept. 400, B. R. Cummings; Dept. 410, M. Di Biaso, R. J. Waters; Dept. 502, J. W. Beatty; Dept. 519, K. W. Overfield; Dept. 562, W. C. Braley; Dept. 565, H. M. Harvey, C. L. Johnson; Dept. 574, Geraldine M. Le Clare; Dept. 582, A. D. Riedler; Dept. 756, O. J. Riddle; Dept. 758, N. Montallegro; Dept. 761, T. Hirasaki; Dept. 780, Marguerite T. Kellam; Dept. 831, Willa R. Gonzales, O. L. Lopez, Evelyn H. Rabe, F. E. Rogers, E. D. Shattuck, L. Von Tungeln; Dept. 850, Frances C. Weismantel; Dept. 978, C. T. West; Dept. 979, L. M. Evans; Dept. 999, J. C. Fordice.

Ten-year: Dept. 015, J. H. Rosenbaum; Dept. 019, J. F. Spencer; Dept. 059, C. L. Arosin; Dept. 101, Nora H. Irwin, E. D. Kohl; Dept. 110, T. P. Dougherty; Dept. 115, H. R. Hughes; Dept. 130, Eleanor L. Brittain, R. H. Clevenger; Dept. 142, R. J. Spanley; Dept. 143, M. E. Chiara, R. F. Franke; Dept. 144, D. J. Schultz; Dept. 170, M. W. Miesse; Dept. 191, E. V. Torp; Dept. 195, Marjorie L. Bach; Dept. 250, F. D. Mealey; Dept. 506, E. J. Carr; Dept. 515, R. K. Lawson; Dept. 516, F. C. Finch Jr., W. G. McClure Jr.; Dept. 519, H. S. Kierstead; Dept. 524, K. G. Blair, P. W. Penn.

Dept. 533, N. W. Schofield; Dept. 541, E. T. Lipscomb Jr.; Dept. 551, B. G. Pollard; Dept. 565, T. H. Gordinier, R. N. White; Dept. 585, G. F. Campbell Jr.; Dept. 756, J. Wynn; Dept. 780, H. T. Fischer, Dora R. Rebolledo; Dept. 810, G. T. Vargo; Dept. 950, F. J. Gaffney; Dept. 961, P. D. Blair, G. K. Jerahian; Dept. 962, J. W. Van Doren Jr.; Dept. 978, P. C. Adams; Dept. 979, D. Cone, A. H. Cowart, R. O. Ivo, D. R. King, W. E. Nagle, F. M. Waitkus, K. C. White; Dept. 985, J. F. Farris; Dept. 986, M. Franke.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending March 17.

Dept. 002-0, B. J. Wagstaff; 024-0, D. E. Knapp Jr., C. Mendoza; 049-0, W. R. Panke; 059-4, A. W. Bailey; 141-3, G. J. Williams; 143-1, J. W. Pullis; 144-2, H. Gallant, E. McLeod (two awards); 149-3, J. S. Schwab; 518-0, G. Tompkins; 574-1, A. Aron, W. H. Pfender Jr.; 732-0, H. J. Brenner, 756-0, N. A. Loftin; 832-1, J. B. Miller; 832-3, M. L. Larsen; 840-2, J. S. Thompson; 845-4, R. A. Snow; 957-0, J. A. Madden; 964-4, J. E. Endicott; 979-1, A. C. Darr, J. A. Schnabel; 979-4, C. L. Wadding; 979-6, J. A. Leger; 987-0, J. F. Mayer (two awards), L. L. Ripley.

Employe Suggestion awards approved for the week ending March 24.

Dept. 002-0, E. Fountain (two awards); 015-0, K. A. Nelson (two awards); 016-0, M. V. Archibeque; 041-0, J. Caldwell; 142-1, H. L. Berry; 143-3, F. A. Baugh; 146-5, A. C. Gormish III; 193-2, V. M. Todd; 193-3, A. A. Vernon; 195-0, M. E. Percival; 401-5, R. N. Davis; 401-6, C. J. Bechtel; 454-0, G. W. Lyst; 524-6, M. I. Potterton; 543-2, J. L. Hanson; 574-1, W. B. Evans; 761-0, W. C. Hoofard, C. W. Neal (two awards), G. G. Shoop; 764-0, E. H. Johnson, R. E. Lopez; 780-3, M. B. Clapper; 780-4, K. L. Haines; 830-0, A. D. Young; 835-1, L. S. Sidock; 957-0, A. A. Ames; 979-1, R. O. Boles, T. J. Skelley; 979-2, C. J. Berlin, W. E. Carpenter, F. G. Hagerman, P. W. Heasley, W. B. Sullivan, J. M. Wardman; 979-3, J. G. Williamson.

Retirements

CONVAIR

AMBLER—Clair L., Dept. 130-9. Seniority date June 17, 1943, retired March 12.

BACON—A. J., Dept. 832-3. Seniority date Dec. 18, 1956, retired March 24.

BOCKOVER—Fred L., Dept. 972-0. Seniority date Sept. 20, 1956, retired April 27.

BOWLES—Herbert S., Dept. 405-2. Seniority date Sept. 24, 1951, retired March 26.

DURBIN—Estill E., Dept. 143-4. Seniority date Nov. 11, 1941, retired March 17.

FLOYD—William O., Dept. 194-0. Seniority date July 9, 1956, retired March 14.

HELLER—Wesley B., Dept. 170-2. Seniority date Sept. 5, 1951, retired March 20.

JOHNSON—Walter E., Dept. 410-0. Seniority date Dec. 15, 1955, retired March 24.

KUPEC—Frank Jr., Dept. 880-1. Seniority date Feb. 12, 1957, retired March 19.

LORD—Charles C., Dept. 6-22. Seniority date June 19, 1951, retired March 19.

NEVILLS—Myrtle S., Dept. 733-0. Seniority date July 10, 1950, retired Jan. 23.

Personals

Dear Friends:

It was so thoughtful of you to remember my brother, Verne A. Gibson (Dept. 401, retired 1962), at our time of sorrow. He lived for Convair, enjoyed working there and was very fond of all of you. Thank you so very much.

Marie Rich

* * *

I wish to thank everyone that had any part in giving me a going-away present of a Skil saw and the coffee and cake retirement party.

Floyd A. Baker
office equipment mechanic
Dept. 250-3 (retired)

* * *

Your thoughtfulness in remembrance of Milton Lear will always be cherished and remembered. No words can express our deep appreciation.

The Milton Lear Family

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Kearny Mesa, ext. 1931. Bldg. 17, Room 7, 8 a.m., Mondays, April 17 and May 1. Lindbergh Field, ext. 491. Bldg. 14 auditorium, 8 a.m., Tuesday, April 11; 8 a.m. and 4:30 p.m. Tuesday, April 25.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931, Kearny Mesa.

Invention Disclosures

CONVAIR

ADAMS—Jack S., Dept. 143-1, and R. E. REEVES, 733-0. Sampling & Flushing Tank.

SWANT—K. W., Dept. 578-0. 5KHz Generator.

THOMPSON—B., Dept. 581-0. Integration Ordnance Delivery System.

Rider-Driver

CONVAIR

RIDE WANTED—From 3119 Ivy St. Burlingame (south of North Park), to Kearny Mesa, 7:30 to 4:15 shift. Phone Gilda Sandoval, ext. 3223 KM.

Deaths

CONVAIR

CAMPBELL—Kenneth V., Dept. 400-6. Died March 24. Survivors include wife, Phyllis L. son, and daughter.

LEAR—Milton F., Dept. 130-1. Died March 20. Survivors include wife, Josephine B. and son Frederick W.

General Dynamics News

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Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Data Processing Wins '66 Award

(Continued from Page 1)

A total of 245 accidents were reported during the year — five less than in 1965 — but accident costs were reduced considerably due to lower severity.

Bowers said improving the division's safety record 5 per cent this year to meet 1967 division objectives may be difficult.

"It's a matter of discipline," he said. "Let's work at it day in and day out. We want to see Convair best in the Corporation — not only in this area but in every other one."

Plans for the division's new "clean plant" program were discussed by E. D. Bryant, vice president-operations, and John P. Hopman, program chairman.

Grant L. Hansen, vice president and program director — launch vehicle programs, commended the division's off-site bases for their safety efforts and pointed out that safety and housekeeping records are becoming "more and more important" in dealing with customer organizations.

Hansen urged increased attention to "safety of things" as well as "safety of people."

"Accidents to equipment also are being used as a measure of what kind of company you have," he said.

Harry Lund Elected President of AIIE

Four Convair men were elected to office of the San Diego Chapter of the American Institute of Industrial Engineers for the 1967-68 term.

Harry Lund, supervisor of maintenance planning, heads the local chapter as president.

C. C. Harper Jr., Dept. 405-0, is first vice president; and C. G. Perdue, Dept. 964-2, secretary. W. L. Timm, Dept. 250-2, is a member of the new board of directors.

Financial Stability Keystone to Success Of GD, Says Sargent

(Continued from Page 1)

ally show a much lower profit as a per cent of sales than such giants as General Motors, General Electric, etc.

"However, a more important criterion (for stockholders) is return on investment. In this respect, General Dynamics in 1966 earned 20.5 per cent, which is quite respectable and compares favorably with the same blue chip companies such as GM, GE, etc.

"Aside from the fact that I am paid to do so, you may wonder why I dwell so on our financial stability and profitability. The answer is quite simple—this record is all important if we are to have available to us the tremendous sums of capital that are necessary to support our continued growth and development . . . Stockholders and other investors will not continue to supply the tremendous sums that are required unless we can show stability as well as growth . . .

"In General Dynamics we spent $62 million for modernization and expansion of facilities in 1966 and we are budgeting expenditures of considerably more in 1967. At Convair division alone our expenditures in the two years 1966 and 1967 will amount to $17 million . . . The situation at Convair is typical of our other divisions, where we must spend prodigious sums so that we may have the chance to exploit our great technical competence.

"This tremendous need for capital inevitably brings us to our stockholders, with whose resources we are entrusted. In the final analysis we must have their confident support if we are to progress . . ."

Here Sargent reviewed General Dynamics' record of steady growth in the last five years.

"However, despite this record, 1967 is a critical year. With capital expenditures at an all-time peak—and with money conditions extremely tight—our earnings must continue to grow if we are to be assured of the availability of adequate funds . . ."

Sargent pointed out that in recent years GD has been blessed with one or more large programs "very much on the upbeat" such as the Atlas program at a time when the B-58 program at Fort Worth was at a high level; the submarine program at Electric Boat sustaining the company's position; "and now Fort Worth is picking up the ball with the F-111."

"The present Convair complex has continued in recent years with a very satisfactory sustaining record . . . We are all proud of the wonderful record of reliability that you have achieved on Atlas . . . and the superb technical achievements in the Centaur program . . ."

"We are confident it is now your (Convair's) turn to win the next big sustaining program of the future . . . Under Jack Bowers' dynamic leadership, supported by an enthusiastic management team, I'm sure Convair will pull a very strong oar in our Corporate boat and continue to contribute importantly to the stability and growth of our Corporation . . ."

★ ★ ★

Sargent was introduced by John Milling, Convair division controller, and M. L. Sweeney, club president, chaired the meeting. Guests included Edward H. Heinemann, Corporate vice president-engineering and program development; T. L. McPherson, Pomona division controller; J. R. Blattenberger, Stromberg-Carlson Data Products controller; Roy W. Brewton, Corporate director of financial policy-defense products.

G. J. Gonlag, club first vice president, presented awards: "Booster of the Month" to Vincent L. Brierley, Dept. 142-0; gold key rings to members who retired in January: Charles F. McCabe, Robley D. Evans, Foster S. Hurst, Albot B. Oberg, Paul J. Leach, William W. Kinney.

APPRENTICE WINS IN STATE CONTEST

(Continued from Page 1)

required to employ all aspects of machine shop work—lathe work, mill work, bench work, and were judged on proper procedure, work habits, safety practices, accuracy, and speed.

Coyle, 22, joined Convair's apprenticeship program in September of 1964 after completing his Associated Arts degree in machine shop at San Diego City College. He will be due for his journeyman's rating this fall.

He has been exceptionally dependable, L. W. Turner, coordinator of the Lindbergh Field apprenticeship program, remarked. "In fact, he has only had one absence that I can recall," Turner said, "and that was one day at the time of his marriage a couple of years ago."

Coyle is assigned to the Lindbergh Field machine shop.

Harry Miller, Kearny Mesa apprenticeship coordinator for educational services which directs the division's program, accompanied Coyle to the state contest.

S-C Data Products Opens New Mfg. Facility at El Cajon

(Continued from Page 1)

"El Cajon seemed best suited to our needs in consideration of the availability of labor, city advantages, and convenience of location," he explained.

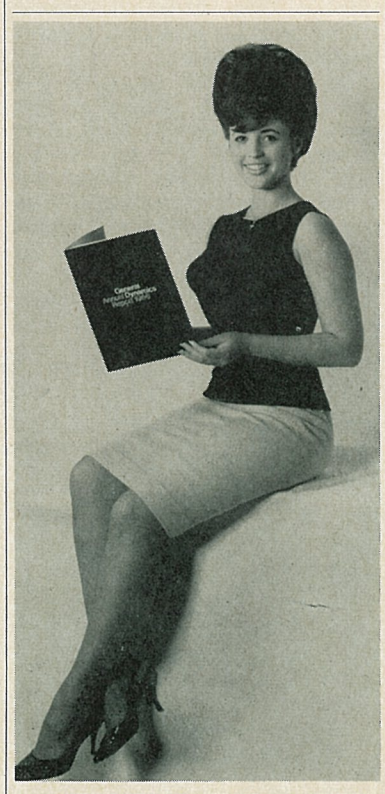
J. R. Blattenberger, Data Products controller, represented C. V. Shannon, general manager, and outlined plans for the future of Data Products and the new plant.

Dieter, who has directed renovation of the building, said acquisition of a second plant was forced by the lack of space in Data Products' San Diego plant on Hancock St.

Engineering, accounting, and marketing operations remain at the Hancock St. plant, while the new facility will be devoted mainly to manufacturing components for S-C micromation technology systems.

The new plant covers 43,000 square feet. Around 28,000 square feet are used for manufacturing and the rest for administrative offices.

There now are about 100 employes working at the El Cajon plant with another 100 expected to be added by the end of the year. Total Data Products employment now stands at 450. This figure is expected to top 600 before the year is out.



INTERESTING — Crystal Richards, key punch operator in Convair Dept. 101-6, reviews copy of General Dynamics Annual Report for 1966. Copies are being sent to members of General Dynamics Savings and Stock Investment Plan.

GD Scientists Judging 'Fair'

Over 40 General Dynamics scientists are on the roster of judges who will grade young people's exhibits at this year's Greater San Diego Science Fair, now in progress in the Federal Bldg., Balboa Park.

Jack L. Bowers, Convair division general manager, is a member of the Fair's board of directors.

Response of experts from the area's scientific, education, military and industrial installations was greater than ever before, said Jack Croft and Emory Thurston of Convair, co-chairmen of the judging committee which recruits judges and counselors.

Exhibits will be judged today (April 5). The Fair then will be thrown open to the public the rest of this week, April 6 through 9.

Judges from Convair are: James F. Brady, M. D. Campbell, Dr. Rolf Dethlefsen, Richard L. Forrest, Dr. Michael Gribbs, James F. Haskins, Dr. Samuel Kaye, Dr. J. M. Maughmer, Dr. John P. McCann, Dr. John T. Neu, Dr. Bernard Newsom, Gerald L. O'Barr, George E. Pynchon, John D. Rhamy, Dr. William J. Schart, Edward W. Schwartz, John W. Steadman, T. T. Tanalski, D. W. Vorbeck.

General Atomic: Peter Baima, Dr. W. F. Bethard, Dr. Giovanni Bucolo, Dr. Giovanni Caprioglio, John B. Dee, Walter V. Goeddel, James R. Hooker, Dr. R. M. Leger, Charles S. Luby, Dr. J. William McGowan, Dr. R. A. Meyer, Dr. Park H. Miller, R. G. Mills, Roy E. Norman, George T. Schnurer, Robert G. Shevlin, Brian B. Spillane, Dr. Martin O. Stern, Dennis Stevens, G. R. Tully Jr., Dr. D. O. Wissinger, Peter Zouraeff.

Electronics: Ray E. McIntyre.

SUPERVISOR 'POOL' PROGRAM PLANNED

A program to identify, select and train employes for future supervisory positions in the Convair division has been announced by Jack L. Bowers, general manager.

The "pre-supervisory selection and training program," a part of the division's "Management Upgrade" program, is designed to create a "pool" of candidates qualified to fill first-level supervisory positions as they are established or as vacancies occur.

Employes nominated will be screened and evaluated by a selection committee composed of line management, then will be scheduled for pre-supervisory training.

When supervisory openings occur, information on the background and performance of employes in the "pool" will be available for use by management in selecting most qualified candidates.

Atlas-Centaur Ready For Lunar Launch

(Continued from Page 1)

ants. Tony Pace is offsite test support coordinator at Kearny Mesa.

Convair had a 27-man "tiger team" from Kearny Mesa at the Cape last week with NASA Lewis Research Center representatives for an AC-12 review.

Barringer was team captain; Howard Newman, technical chief; J. W. Swigart, Atlas program chief, and W. D. Taylor, team coordinator. Other members were:

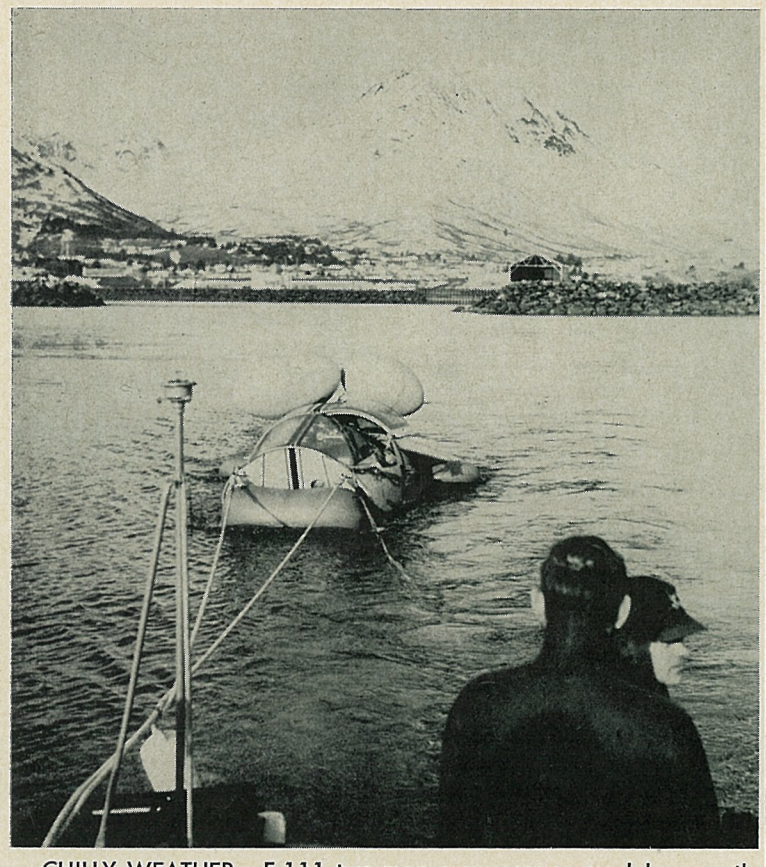
Mechanical systems — Al Strubb (captain), John Jarman, Tom McDowell, Frank Beale, Robert Edison and Mike Debreceni.

Electrical systems — L. A. Del Casale (captain), J. W. "Bob" Schaelchlin, Boyd Spencley, Verl Walker, Paul Burke, John Frederick and G. L. Tidwell.

Flight control — Walter Sauer (captain), Leroy White, Fred Kunzel and Donald Quinn.

Structures and analytical — George Wilson (captain), George Jerahian and John Hughes.

Reliability and data — W. S. Hicks (captain), Jack Taylor and Myke Dickey.



CHILLY WEATHER—F-111 two-man crew escape module recently underwent survival tests in Arctic waters. Here it is shown at Kodiak Island. Two Air Force sergeants spent night aboard and despite rough weather claimed they were "reasonably comfortable."

Arctic Winds and Waves Buffet Escape Capsule

A two-man F-111 crew in a production escape module rode out a 24-hour survival test in rough Arctic waters, then were successfully "rescued" by a helicopter.

The tests were conducted by the Air Force recently off the coast of the U.S. Naval Station at Kodiak, a small island south of Alaska.

The crew module reportedly "rode well," despite sometimes heavy winds that gusted at 40 miles an hour.

"We were quite satisfied with the tests as far as they went," said R. L. Atkins, Fort Worth division senior design engineer who helped with monitoring operations. "However, the severe weather did prevent some programmed testing."

The production crew module — with TSgts. Roy M. Wilson and Henry A. Gandy inside—was lowered by crane into the icy waters off Kodiak on the morning of March 9. The module was tethered to the U.S.S. Kodiak by two 70-foot nylon ropes.

"Crewmen were in regular winter flying suits when they were lowered into the water," Atkins said. "Later, they donned the lightweight, but thickly padded cold-weather suits which are part of the survival gear in the module."

The crew used only a fraction of the water and rations stored in the self-contained module. During the test, they demonstrated the use of other survival and rescue-communications equipment.

The sea was calm when tests began. But at night, the module and its crew had to ride out 10- to 12-foot waves whipped up by strong winds.

Crewmen said the module "rode well" in the rough sea and that they were "reasonably comfortable" throughout.

Temperature was about 32 degrees F. when the test started, but dipped to near zero during the night.

Helicopter rescue operations, part of the planned tests, were conducted later without wetting either crew member, despite rough water and helicopter-blade downwash.

One of the crewmen was lifted to safety in the basket, while a sling was used to rescue the other airman.

The F-111 crew module contains its own environment of emergency oxygen and cabin pressurization, with a fully automatic ejection sequence once the ejection handle is activated.

Flotation bags in front and aft are triggered by crewmen once the module lands in water. In addition, a self-righting flotation bag on top can be inflated to straighten the module if it turns on its side during landing.

The system also provides for underwater escape from a submerging aircraft. "If the plane were to start sinking after a landing at sea, the module — at a certain level under water — would automatically sever itself from the plane, surface and deploy flotation bags," Atkins pointed out.

Sub-Zero Temperature Bearable As Long As Winds Stay Light

When temperatures dipped to 28 below zero—as they often did last month in Alaska—Photo Specialist Dick Magness of Fort Worth division had to "winterize" his camera.

"Oil froze at this temperature, so we had to remove every speck or the cameras wouldn't work," he said.

Magness and several other Fort Worth division employes ended a 30-day stay last month at Eielson AFB near Fairbanks, where they helped the Air Force monitor Arctic tests on airplane No. 10.

Magness then joined Dick Atkins, Fort Worth senior design engineer, on Kodiak Island (just south of Alaska), where tests on the F-111 crew module were run.

Though temperatures dropped as low as 42 below in Fairbanks, the hardy Texans "weren't really bothered" by the cold.

One reason was attire: thermal long underwear; Air Force winterized flying suit; parka; mukluk (cloth boots); several pairs of socks; a ski mask.

Staying outside can be a touchy proposition in the Arctic because of the "chill factor"—a condition of wind velocity and temperature.

If the temperature is a flat zero, for example, and there's no wind, a person can remain "comfortable with normal precautions."

At this same temperature and with a 10-mile-an-hour wind, however, travel becomes uncomfortable on overcast days. If the wind whips up to 20 miles an hour, flesh can begin to freeze.

And if the temperature remains at zero and winds reach 25 miles an hour or more, survival efforts are generally required!

"Obviously," Magness said, "wind is the big factor. I actually got colder in Kodiak, where it seldom got below zero, than I did in Fairbanks."

"The sky was clear most of the time at Kodiak," Atkins said, "but the wind was usually howling like a demon.

"If I stayed outside for any time, I'd notice that my jaws would get tight, and it would sometimes be difficult to speak or whistle."

Division Reps To Confer in NY On Lubricants

Consolidated purchasing and bulk storage of industrial lubricants that may result in up to 35 per cent cost savings will be discussed by a General Dynamics industrial lubricants committee April 12 at Corporate Headquarters, New York.

W. J. Stanley of Convair division, steering committee chairman, said details on a volume purchase agreement with Texaco, Inc., will be presented by C. T. Talbott of Convair, purchase agreement monitor, and bulk deliveries and storage will be discussed by L. E. Erickson of Material Service division.

R. E. Brigham of Fort Worth and F. J. Merwin of Electric Boat will describe lubricant programs at their divisions and G. W. Oliver of Convair will review a recently published technical paper.

Other participants will be C. G. Keach, Corporate Hq.; M. Mosher, Electric Boat; P. L. Evans, Quincy; Vince Lariton, Electronics; A. M. Baker, J. J. Carpenter and F. C. Clayton, Fort Worth; B. S. Weil, Material Service; and Jack Betts, Pomona.

The committee last year compiled and published a General Dynamics lubricants manual detailing specifications and quality for 200 industrial lubricants on which competitive purchasing may be based.

Freeman Coal Plans New Mine

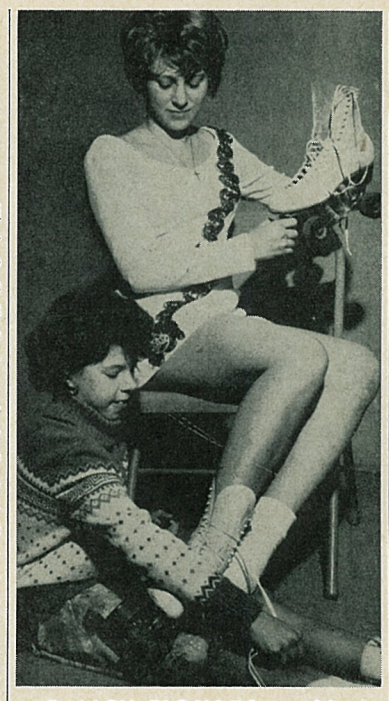
General Dynamics announced recently that its subsidiary, Freeman Coal Mining Corp. of Chicago, will open a new mine, designed to produce metallurgical-grade coal to meet the requirements of steel mills in the Midwest.

When fully developed, the new mine is expected to produce more than three million tons of coal per year.

The new mine, to be called Orient No. 6, will be located 1¼ miles southeast of Waltonville, Ill. It is the second to be developed in the large deposits of metallurgical coal which Freeman holds in Jefferson County, Ill. Eighty million tons of reserves have been assigned to the new mine.

Two 790-foot-deep shafts are to be constructed. The mine is expected to begin initial production during the latter half of 1968.

At present, Freeman operates a total of four large coal mines in Illinois.



FANCY FIGURES — Linda Hughes helps her sister, Gail, with roller skate shoe laces after Gail won sub-junior figure skating championship of Southern California.

Pretty, Too

Skater Wins SoCal Title

A General Dynamics daughter, Gail Hughes, 14, who has been roller skating since she was ten months old, has won the sub-junior figure skating championship of Southern California.

She is the daughter of Mr. and Mrs. Tom B. Hughes. He is in Dept. 51 at Pomona division.

Gail will compete in the California state championship at Bakersfield July 5-10. A winning performance there would put her in line to compete in national and international events later this year.

The whole family skates, including a nine-year-old sister, Linda.

Magazine Publishes GD Authors' Papers On Factory Topics

Papers written by three Convair plant engineering, Dept. 250-0, men were published in the March issue of Factory magazine.

B. L. Forrester, planned maintenance analyst, was author of a paper on "Old numerical control machines getting to be dogs? Teach them new tricks," and Harry Lund, supervisor of maintenance planning, of a paper on "Meters minimize money for maintenance."

W. J. Stanley, manager of plant engineering, was writer of a feature on "Is preventive maintenance really worthwhile?"

'Zero Magnetism' Cube Created

A new "ultra-low magnetic field intensity facility" is being put in operation at Convair's Kearny Mesa plant.

Inside the 125-cubic-foot "work area" the effects of the earth's magnetic field will be reduced virtually to zero so that the magnetic characteristics of satellites and other spacecraft can be accurately measured without being affected by the earth's own field.

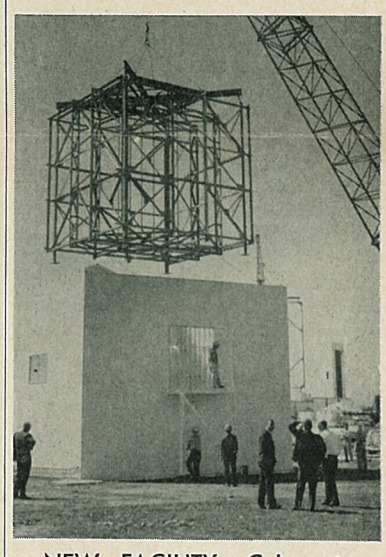
The largest and most efficient of its kind on the West Coast, the facility will be operated by the division's electromagnetic capability group.

Heart of the facility is a 6,500-pound, 20-foot-square non-magnetic metal frame to which are attached a dozen coils of copper wire so placed that when electrically charged the cubicle is "bucked out" of the earth's magnetism. The coils contain more than 15 miles of wire.

Ben Weinbaum, assistant chief design engineer for electromagnetic compatibility, Dept. 542-0, said first tests in the facility will be with Convair's OV1-86 satellite.

Maintaining the "zero magnetism" condition is so delicate that engineers and scientists working in the facility must be careful of their dress. They must have nothing of a magnetic nature on their persons. This prohibits watches, coins, belt buckles, etc., even metal shoe lace eyelets!

Paul Slysh, Dept. 542-0, designed the cube structure; Kenneth Downing, Dept. 551-4, the electrical circuitry; Ralph Pike, Dept. 961-2, layout; Alex Lupenko, Robert Carmen, T. D. Weight, all of Dept. 756-0, engineering test support, assisted with structural work and optics; Peter Williamson, Dept. 551-4, handled computer analysis of the coil system; coil winding was supervised by Max Donaldson, Dept. 551-4, and performed by electronics research and development, Dept. 780-2; David C. Jervis, plant engineering, Dept. 250-2, designed the building.



NEW FACILITY—Cube structure that will be used in negating earth's magnetic field for satellite testing is lowered into place in new building at Convair's Kearny Mesa plant.

"Young man! Came back here and file this blueprint where it belongs!"

Quotable Quotations . . .

(From The Notebook of Elbert Hubbard.)

* * *

"The greatest mistake you can make in life is to be continually fearing you will make one."

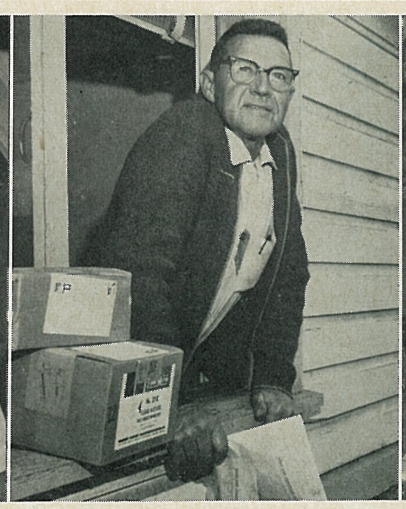
* * *

"If you work for a man, in heaven's name work for him!

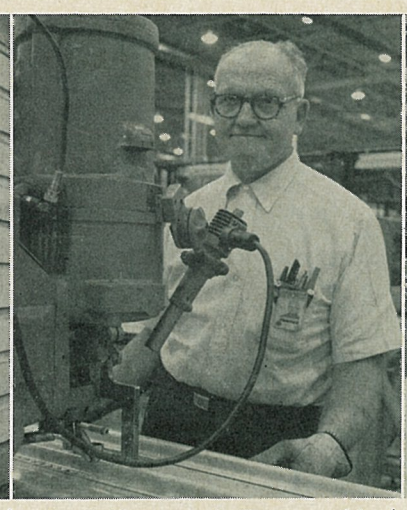
"If he pays you wages that supply you your bread and butter, work for him—speak well of him, think well of him, stand by him and stand by the institution he represents . . .

"If put to the pinch, an ounce of loyalty is worth a pound of cleverness."

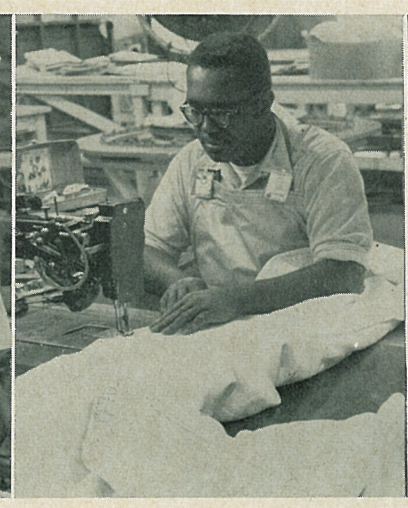
Frank Fischl sets up tests at the rocket test facility, Harbor Drive Test Site, as Dept. 031-0 lab test mechanic, but devotes his off hours to his trained Palomino horse, Amigo, and trick dog, Duchess. Fischl joined Convair in 1941 as assembler of PBYs. During the war he was an Army guard over prisoners of war brought to England. He came back to Convair in 1946 and, except for a couple of layoffs in 1949 and 1964 was in assembly until he transferred to experimental in 1966.



Ernie Sylvester is receiving clerk at AF Plant 19, checking all deliveries of raw stock and commercial material against invoices as it is unloaded at the dock. He had worked in manufacturing control at Convair and the former Astro plant most of the time since 1942, rising to assistant foreman, until he joined Dept. 840-2 a couple of years ago. His wife, Nita, has been an electronic assembler for 15 years with Convair and Electronics. They make their home at Del Mar.



Jack Mayer, missile assembler in Dept. 761 at Kearny Mesa, has been with Convair 23 years. He started in the early days of the PBY, B-24, B-36 programs and was on the F-102 and F-106 programs before joining the former Astro division. He was a Navy employe at North Island and an AF inspector at Plant 19 from 1940-47. Mayer and his wife live in the Rolando area. He enjoys golf and is an avid coin collector. He served as president of the Convair Coin Club when it was first formed.



Robert Gordon, power sewing machine operator at Kearny Mesa plant, is shown working on a new-type boot for insulating Atlas SLV-3C and 3A engines from heat during lift-off. Gordon, born in Mississippi, has been with Convair since 1952 and has worked on insulation boots since 1962. He is local president of Jobs Now, Inc., which provides training and gets jobs for the unemployed. He and his wife, Linnie, operate a bargain shop which stocks bankrupt drygoods. They have five children.

Joanne Sullivan, Miss Pacific Beach of 1960, now presides over the offices of John Zathan, chief of material, and John Morgan, chief of finance, at Convair Service Center. She joined the former Astro division in 1960 as clerk and soon rose to steno-secretary. Joanne worked at Plant 19, Fordham Bldg., Dyess AFB, and Vandenburg AFB before joining the Service Center last December. She lives in Crown Point so she can enjoy her favorite sport—water skiing. She also snow skis and bowls.

Convair Given Study Contract For NASA Subsystem Module

Convair division engineers are defining structural design and equipment for an "engine room" space station vehicle, the Basic Subsystem Module (BSM), under a $400,000 study contract from NASA's Manned Spacecraft Center in Houston.

Preliminary definition of design and materials for the BSM and equipment for it to maintain three to nine-astronaut crews in space for one year with 90-day re-supply is included in the 26-week study.

The basic module is referred to as the "engine room" because its structural shell houses electrical power, life support, environmental and stability and control systems.

Additional modules can be added — with several attached together in orbit to provide a variety of laboratory applications and accommodate larger crews.

Proposed initial use of the BSM is in the Apollo Applications Program where it would be coupled with the present Apollo spacecraft and launched by an advanced Saturn booster.

The BSM would be equipped with hatches so astronauts could move from the Apollo spacecraft into the module for work, or from module to module in later missions involving multiple module use.

Basic module sizes being considered in the study range from 10 to 33 feet in diameter with a headroom of about seven feet. Oxygen-nitrogen atmosphere systems are being studied for "shirt sleeve environment" in the BSM.

Radiation protection, heat insulation and heat radiation are among many factors being studied in considering designs of the module structure itself.

The current study emphasizes the earth orbital space station application although flexibility of the BSM design will permit its use for future deep-space manned missions.

Wallace W. Withee, program director for manned earth orbital systems, is directing the study and reports directly to E. R. Peterson, vice president-research and engineering.

Other key personnel and areas of responsibility include J. W. "Bill" Beatty, structural systems; Sterling Campbell, thermodynamic analysis and radiator concepts; David Krause, life support, environmental, electric power and stability control systems; Stanley Kuerbis, program control, and J. W. Maloney, systems integration and mission analysis.

Executive 240 Gets Slick New Paint Job

Convair Service Center completed one of its most sophisticated paint jobs late last month on a Convair-Liner 240.

The executive plane, owned by TDJ Co., was given a sleek exterior in white with maroon and blue stripings.

E. J. Huntsman, Service Center manager, commended the paint facility personnel for their "exceptionally fine work."

The Center's paint function is supervised by H. B. McIntosh, reporting to Ray Niske, general supervisor.

Rep. Miller Slated To Address Club

Congressman George P. Miller (D-Calif.) will speak on "legislative responsibility in evaluating national space missions and goals" April 21 at a dinner meeting of Convair Management Club in the Hilton Inn.

Miller is chairman of the House Science and Aeronautics Committee and is special adviser on peaceful uses of outer space to the U.S. Ambassador to the United Nations.

Club Will Observe 25th Anniversary

John Doig heads the committee of arrangements for Convair Management Club's 25th anniversary observance June 8 in the International Room of El Cortez Hotel.

Committee chairmen and their assignments are: L. J. Solheid, souvenir program; Art Braidic, entertainment; Ray Blair, public relations; Chuck Reid, fliers; Gertrude Hunter, Managair; Dick Peck, legal; Del Dimmitt, sergeant at arms; Larry Lawson, transportation; Al Fink, property arrangements; Gerry Schmidt, programs and arrangements; Jack Kline, speakers; J. B. Harter, decorations; Wes Magnuson, host room; Jack Bryant, reception; J. F. Scanlon, finance; Jim Terrien, head table seating.

Convair Seeks Bids On 1966 Chevrolet

Convair salvage offices are accepting bids for sale of a 1966 eight-cylinder, two-door Chevrolet Caprice sports coupe equipped with power-glide transmission, tilt telescopic steering wheel and air conditioning.

Bids will be opened at 1:30 p.m. April 11. The vehicle can be seen until 3:30 p.m. daily at the Kearny Mesa salvage yard through April 10. Bid forms are available at both Kearny Mesa and Lindbergh Field salvage yards.

LILLIE MAE BARR GETS STAR ROLE

Lillie Mae Barr, a Prophet Co. cafeteria employe at Convair's Kearny Mesa plant, will play the title role in "Goodnight, Mrs. Puffin," which opens Friday (April 7) at Mission Playhouse in Old Town.

Neil Martin Named Patent Attorney

Neil F. Martin last month joined Convair division's patent counsel Dept. 103-1 as patent attorney with duties including preparing, filing and following up on patent applications and related matters.

Neil Martin

Martin holds a bachelor's degree in mechanical engineering from Lehigh University in Bethlehem, Pa., and received his law degree last June from The American University in Washington, D.C.

He has been employed as a patent adviser for the U. S. Navy at the David Taylor Model Basin in Washington, D.C., and previously served three years as a patent examiner for the U. S. Patent Office.

W. J. Dawsey in Race For School Board

W. J. Dawsey, methods engineer in Convair Dept. 405-0, is a candidate for the Grossmont District school board in the April 18 election. The board is governing body for Grossmont College and seven area high schools.

Dawsey has been a Convair employe 20 years and has been active in numerous community, civic, school and church organizations. He is a member and past vice chairman of the Con-Trib-Club committee.

Four GD Men Serve Toastmasters Club

Four General Dynamics employes have been elected officers of North Shores Toastmasters Club #66, which has dinner meetings at 6:30 p.m. Thursdays at River Valley Inn.

T. P. Young, Convair Dept. 984-2 is president, R. J. Wagar of Convair Dept. 986-4 is educational vice president, Manuel Mariscal of Stromberg-Carlson is secretary and David Moyer of General Atomic is treasurer.

April 29 Next Date For Salvage Yard

Convair salvage yard at the Lindbergh Field plant will be open for its next employes' sales day on Saturday, April 29.

ELECTRONICS GROUP WILL HEAR FAGER

John Fager of Convair will talk on Convair's feasibility studies of large erectable antennas for use in space at the meeting of the San Diego council of Western Electronics Manufacturers Association tomorrow evening, April 6, at Kings Inn.

Seven Outstanding Craftsmen Honored by Electronics-SD

Six men and a woman were tapped as outstanding craftsmen at Electronics-SD operations' second semiannual Zero Defects Craftsman awards presentation last month.

Don C. Prim, general manager, hosted the group and their supervisors at an awards luncheon held at the Kona Kai Club March 16. Each received a certificate and an onyx base desk pen set in recognition of performance over the last six months.

Honored were Charles S. Ashworth, test engineer; Morris C. Bowman, shipping department leadman; Raymond J. Gallagher, production order analyst; Jerome G. Hanson, assembler-electro mechanical; Gertrude R. Johnson, administrative secretary; Carroll E. Jones, senior electronics engineer; Eugene Swindell, senior research technician.

All were chosen for their error-free work.

Ashworth, now stationed in England as field service representative, was pointed up as a recognized specialist in system malfunction diagnosis and repair in his work with Terrain Following Radar equipment.

Bowman packaged and shipped over 18,000 items in 1966 with no discrepancies.

Gallagher processes between 500 and 700 shop orders a week without error.

Hanson was nominated for "error-free work on the most difficult assignments."

Gertrude Johnson, secretary to the manager of quality control, was chosen for her attitude on the job and willingness to help with extra work.

Jones is responsible for generation of system and subsystem performance specifications and was credited with contributing to the success of the division's Application Technological Satellite Range and Range System equipment in Australia during the launch of ATS 1.

Swindell of the advanced development laboratory was chosen for his skill in assisting in the design, fabrication, and testing of stripline and other high frequency assemblies under development.

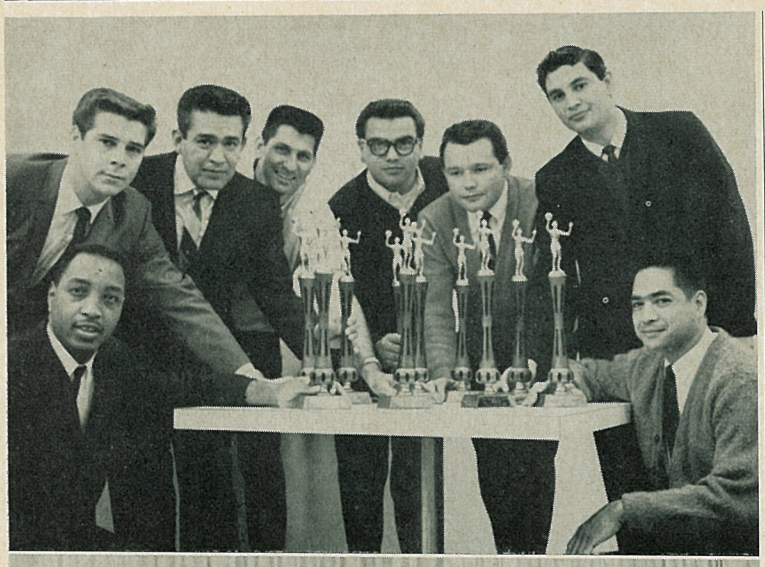
Awardees were selected by the Zero Defects committee headed by D. V. Hill, at that time acting manager of quality control; Joe Cook, representing design engineering; Jack Larson, accounting; Otto Barksdale, estimating; Bill Doroshuk, manufacturing.

$6,200 in Charitable Donations Approved

Grants of $1,000 to the Planned Parenthood Association of San Diego County and $1,000 to the San Diego County Epilepsy Society, Inc., were approved by the Convair Employes' Con-Trib-Club committee March 23.

The committee also allocated $2,100 to five organizations serving the Vandenberg AFB area on recommendation of employes there. Recipients were Santa Barbara County Heart Association, $500; Muscular Dystrophy Associations of America, Inc., $300; Santa Barbara County Tuberculosis and Health Association, $500; Easter Seal Society for Crippled Children and Adults of Santa Barbara County, Inc., $300; and The National Foundation, $500.

ELECTRONICS "CRAFTSMEN"—Don C. Prim, Electronics-SD general manager, at far left, hands pen sets to Zero Defects "Craftsmen" for last six months: John Wahl accepting for Charles S. Ashworth, Carroll E. Jones, Eugene Swindell, Jerome G. Hanson, Gertrude Johnson, Morris C. Bowman, and Raymond J. Gallagher.



HOOP CHAMPS—In shot at top are members of Plastics, CRA slow-break basketball league champs, from left, Isaiah Toran, John Rich, Gil Chavez, John Munson, Rick Alonzo, Luis Inzunza, Rene Morales, manager, Alex Manzano. Not present were Ron Loudermilk and Ray Lucero. In lower photo are Underbrush team members, fast-break league winners, from left, seated, Ted Sitek, Bill Danshaw, Terry Dougherty, Paul Kreimeier, Pete Mihelich. Standing, from left, are Ron Eckberg, manager, Gordon Thiede, Jack Mierzwa, Gary Scherer, Dick Mostowy, Sandy Norman, Gary Titzer.

Prospective Europe Travelers to Meet

In response to the show of interest in the CRA-sponsored European tour this fall, an information meeting will be held for General Dynamics people next Wednesday, April 12, 7:30 p.m., CRA Clubhouse, Kearny Mesa.

Tour details will be outlined and a travel film shown.

Two itineraries for the 22-day trip are offered. The Grand Tour will take travelers by motor coach. The Capital City Tour will be by air to main cities in Denmark, Germany, Switzerland, Austria, Italy, France, England, and Spain.

Grand Tour is $795 a person; Capital City Tour, $859. Cost covers transportation, hotels, sightseeing, many meals, etc.

Departure date has been changed to Sept. 30.

Interested employes may call CRA Clubhouse, ext. 1111 KM, for information.

R&E Team Winner In City Tourney

R&E, second-place team in CRA fast-break basketball, went on to win the Minor B division in the city league tournament by downing Gasco, 55-38.

The Convair entry, managed by Gordon Place, won four out of five games in the double-elimination tourney.

The No. 1 CRA team, Underbrush, was eliminated in Minor A play after winning its first game by two points.

Managers to Make Plans For Softball

A softball managers meeting has been called to organize slow and fast break leagues for coming CRA play.

Team managers will meet tomorrow (April 6) at 7 p.m. in CRA Clubhouse.

Rules will be worked out at tomorrow's meeting, said Pete Beyrer. Team rosters will be due later this month and league play will start the first week in May.

CLUB WILL VIEW BAJA SLIDE SHOW

A slide show of river expositions into Baja California will be shown at the April 16 meeting of the Convair Camera Club. Jim Baker will present the films after the 8 p.m. business session in the Photo Arts Bldg., Balboa Park.

Disneyland Ticket Deadline Approaching

Hurry, hurry, hurry, if you want a ticket to the Disneyland family night!

Sales for the April 8 party close tomorrow (Thursday) night after work shifts at all sales offices except employe services.

Last-minute purchases may be made at any employe services outlet until noon this Friday.

Special price to General Dynamics people is $3.75 each for unlimited use of all rides and attractions between the hours of 8 p.m. and 1 a.m. Convair Management Club is sponsoring the affair for the third year.

Blueprint Reading Classes Continuous

Beginning blueprint reading classes at Convair's Lindbergh Field plant are being held on a continuous rotating basis for both shifts.

The new procedure, being tried for the first time, will allow students to enter classes at any time and learn at their own speed. They will progress from basic into and through advanced blueprint reading, using three textbooks. Average time to cover the material will be around 18 weeks.

Second shift classes are held after work, also an innovation. Hours are from 12:30 a.m. to 3:30 a.m. on Wednesdays. Merle Long, second-shift setup man in Dept. 015, will instruct.

First shift classes are Tuesday afternoons, 3:45-6:45 p.m., with Frank Dohm, weights engineer, instructing.

All classes will be in Room 6, Bldg. 14, LF.

Prospective students must sign with Wayne Turner or Sam Galasso of educational services, ext. 491 LF, before entering the courses.

Tape Recorder Test Scheduled April 11

CRA Hi-Fi Club members will have their tape recorders analyzed at a meeting in the club's studio in CRA Clubhouse at 7:30 p.m. Tuesday (April 11).

W. A. Roden, club workshop chairman, will be in charge of the test program.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111, Kearny Mesa. Deadline for next issue of GD/NEWS is April 11. Call ext. 1071 LF or 3322 KM.)

* * *

ADVENTURERS—Meeting Apirl 19, 7:30 p.m., CRA auditorium. Open to public.

ARCHERY — Instruction and shoot April 9, 1 p.m., CRA Missile Park. Meeting April 14, 7:30 p.m., CRA Clubhouse.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BOWLING—Entries close April 14 for CRA plant championship tourney. Forms at employe services outlets.

BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.

CAMERA CLUB—Meeting April 16, 8 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m , CRA Clubhouse.

COINEERS—Meeting April 19, 7:30 p.m., Convair cafeteria, Lindbergh Field.

DELTA DIVERS—Meeting April 12, 7:30 p.m., CRA Clubhouse.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Meeting April 18; potluck, 6:30 p.m., business, 7:30 p.m.

GARDEN CLUB—Spring Rose Show April 16, Floral Association Bldg., Balboa Park. Open to public free of charge, 1-6 p.m.

GOLF—CRA tourney April 8-9 at Coronado.

HI-FI—Meeting April 11, 7:30 p.m., CRA Clubhouse.

ICE SKATING — GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

PISTOL CLUB—Regular club shoot April 9, 9:15 a.m., SD Police Range, Home & Federal Blvd. National Industrial Recreation Assoc. pistol match 8:45 a.m., April 16, Gillespie Field Range.

RADIO—Transmitter hunt tomorrow (April 6), 7:30 p.m. from CRA Clubhouse.

RIDING CLUB—Meeting April 12, 7:30 p.m., CRA Clubhouse. Open fun show April 16, CRA Horse Ring.

RIFLE CLUB—Senior shoot April 12, 7:30 p.m. Junior shoot April 15, 1 p.m., Gillespie Field Range.

ROCKHOUNDS — Meeting April 12, 7:30 p.m., CRA Clubhouse. Outing to Gold Rock Ranch April 15-16.

ROLLER SKATING—Free GD skate night April 17, Skateland, Front and G Sts. Tickets at employe services.

SOFTBALL—Managers meeting April 6, 7 p.m., CRA Clubhouse.

SPORTS CAR CLUB—Meeting April 12, 7:30 p.m., Convair executive dining room, Lindbergh Field.

SWIMMING—GD swim night April 15, 7-9 p.m., Mission Beach Plunge. Tickets at employe services.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

TRAVELERS—Outing to El Rancho Trailer Villa, Borrego Springs, April 14-16. For information call Virg Marshall, ext. 744 LF.

TROPICAL FISH—Meeting April 10, 7:30 p.m., CRA Clubhouse.

VOLLEYBALL — IRC league play starts tonight (April 5), Muni Gym, Balboa Park.

WOMEN'S GOLF—Tourney April 8, Tecolote Canyon course. First tee-off at 8 a.m.

Convair Riders Join In Pageant, Parade

Convair riders traveled to San Juan Capistrano to join some 300 horsemen in the annual St. Joseph's Day pageant welcoming the swallows back to the mission March 19.

The CRA group's color guard of Boyd Spencley, Conrad Nash, David and Judy Watson, and Gayle Dvoracek rode in the Saturday parade.

Also seen was Floyd Branscom driving his old-time surrey. Passengers were his daughter, Terri, Scotty Payne, club president, and her son, Steven.

Next open fun show will be Sunday, April 16, with equitation events in the morning and gymkhana contests in the afternoon. Regular meeting will be April 12 in the Clubhouse and monthly board meeting on April 26.

Seven Teams Entered In Volleyball Play

Seven Convair teams will go into action this week in IRC volleyball play as the season opens on Muni Gym courts.

Gasp and Flight Control have games scheduled with Home Federal and NEL, respectively, at 7 p.m. tonight (April 5) in the American League.

Noise Boys will play Rohr and Underbrush will meet Gasco No. 2 team at 8 p.m. in National League tilts.

League games will be played Wednesday nights on Courts 1, 2, 3, 4.

Three other Convair teams are entered in the mixed league which will be playing Thursday evenings.

OFFICERS-ELECT—Mrs. Margaret Brock, incoming treasurer, pours for other newly elected officers of Convair Wives' Club. Others, left to right, are Mrs. Sally Harrison, first vice president; Mrs. Flora Loftin, president; Mrs. Marie Herbert, second vice president; and Mrs. Evelyn Morefield, secretary. New officers will be installed and annual service and "Woman of the Year" awards will be presented at a luncheon April 19 at Valley Ho restaurant. All wives of Convair employes are invited.

Pistol Shots to Fire In 'National' Tourney

CRA Pistol Club members will fire in the National Industrial Recreation Association postal pistol match at 8:45 a.m. April 16 at Gillespie Field range. (Targets will be mailed to NIRA for national rating.)

Four four-man teams and 16 individuals are entered for .22 caliber competition and one team and six individuals for competition with carbon dioxide-powered pistols.

The club's next regular shoot is scheduled at 9:15 a.m. Sunday (April 9) at the San Diego Police pistol range at Federal Boulevard and Home Avenue.

R. M. Anderson, club president, also has announced that the San Diego Police Revolver Club will start its regular summer Tuesday night .22 caliber shoots at 7 p.m. April 18.

"This will give General Dynamics employes a chance to get in extra practice and help support the range we use for our regular CRA matches," he said.

Warren Ranscht of Convair Dept. 967-3 fired high score of 286 out of a possible 300 in the CRA Pistol Club's .45 caliber national match March 12 at the police range.

Other members, their department and scores were: J. S. Knutson, 780-2, 281; Jim Halfacre, 041-0, 269; Joe Williamson, 401-5, 264; Roland Schneider, 401-1, 263, and A. E. Kampmann, 143-3, 226.

Spring Rose Show Opened to Public

The public will have a chance to view top blooms of Convair gardeners for free at the coming annual Spring Rose Show, Sunday, April 16.

Doors of the show in the Floral Association Bldg., Balboa Park, will be open from 1 to 6 p.m.

Sponsored by the CRA Garden Club, the event is open to all General Dynamics exhibitors. Entries will be accepted in 56 classes of roses as well as arrangements, corsages, and children's divisions.

Exhibits may be entered at the show location from 7 to 11 a.m. on show day or from 7 to 9 p.m. the evening before, April 15.

Classification forms are available at all employe services outlets and the CRA Clubhouse.

Adventurers Plan Equipment Display

CRA Adventurers will learn the right kind of equipment for camping trips off the beaten path at the April 19 meeting, 7:30 p.m., CRA auditorium.

Lightweight equipment and foods for primitive travel will be on display, CRA Commissioner Dick Bowen said. Slides illustrating the program have been prepared through the combined efforts of Joe Quijada, Adventurers chairman, his wife, Kay, Vince Brierley, Ray Madden, and Jorge and Shirleen Zorrilla.

Hams Will Sponsor Transmitter Hunt

CRA Radio Club will sponsor a transmitter hunt at 7:30 p.m. tomorrow (April 6). The hunt will begin from CRA Clubhouse and participants will use direction finding loops at 29.5 megacycle frequency.

Club officers for the coming year will be elected at 7:30 p.m. April 20 in the Clubhouse. Nominations will be from the floor.

Bargain Tickets

(Following are bargain-rate tickets currently available to employes. Unless otherwise stated, they are offered at employe services offices of Convair, Stromberg-Carlson, Electronics-SD, Bldg. 51 engineering mailroom, Lindbergh Field, H. C. Medearis' office at AF Plant 19, and CRA Clubhouse.)

★ ★ ★

"The Odd Couple," Circle Arts Theatre, 8:30 p.m., Friday, April 21, discount prices, $5 and $4 (50c reduction). Deadline April 17.

SD State College Red-Black football game, Saturday, April 15, 8 p.m., Aztec Bowl. Discount tickets, 75c; children under 12, 25c. Deadline April 10.

On Sale:

Sets of six books on early San Diego area history are now on sale at $41.50 at all employe services outlets — a 30 per cent savings. Five of the volumes are by Richard Pourade, editor emeritus of The San Diego Union. The sixth, "The Ancient Hunters of the Far West," is by Malcolm J. Rogers of the San Diego Museum of Man.

* * *

Stainless steel Zippo lighters, with Convair missile monogram and lifetime guarantee, are on sale at $3 at Convair employe services outlets.

* * *

General Dynamics reliability slide rules are on sale at $1 each at the employe services office at Kearny Mesa only.

Only One Week Left To Enter Keg Meet

General Dynamics keglers have only another week to sign for the annual CRA plant bowling championship. Entries will be accepted until next Friday (April 14).

Events will be scheduled throughout the weekends of April 22-23 and 29-30 at Pacific Recreation.

Entry forms are available at all plant employe services outlets and at the CRA Clubhouse, Kearny Mesa.

AF Officer on Duty at Convair Decorated For Service in B-52s

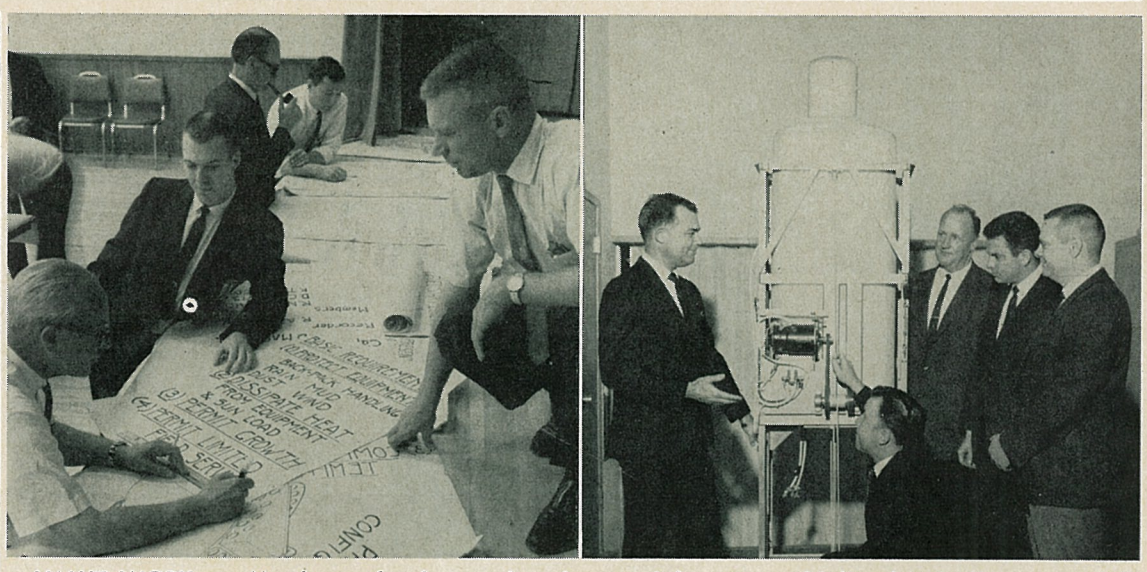
Maj. Pat Corbett, one of four Air Force officers spending 10 months with Convair division in the Air Force Institute of Technology "Education with Industry" program, has been presented an Air Force Commendation Medal and certificate.

A citation accompanying the award lauded Corbett for "distinguishing himself by meritorious service" while a B-52 radar navigator assigned to the 736th Bombardment Sq., 454th Bombardment Wg., Columbus AFB, Miss.

"During this period, he demonstrated exceptional airmanship, initiative and devotion to duty while participating in emergency war order exercises . . ." the citation said.

Duty for which the medal was awarded included a combat tour in Southeast Asia. Corbett has been advised that he will be returning to Southeast Asia for a duty assignment in Thailand when he leaves Convair in July.

COMMENDATION—Maj. Pat Corbett, right, Air Force officer in "Education with Industry" program at Convair, receives Air Force Commendation Medal certificate from Lt. Col. G. D. Fairbanks, Defense Contract Administration Servcies deputy plant representative at Kearny Mesa.



VALUE WORK — Members of value engineering workshop team (right photo) discuss possible changes for target mechanism. From left are A. B. Lutterman, R. B. Bailey, A. M. Smith, Frank Bench and T. L. Stalcup. Preparing charts for use in final team presentations (left photo) as E. A. Lindem, right, looks on, are, from left, R. A. Ackley, H. D. Marshall, R. W. Young and R. T. Anderson.

NMA Gathering Slated April 22

Management Clubs at Convair, Stromberg-Carlson, and Electronics are joining other groups in the San Diego area to host the National Management Association Regional Management Development Conference April 22.

The one-day session of speakers and workshops will be held in California Western University's new auditorium.

Theme of the conference which will bring new management and administrative concepts to the attention of San Diego managers and executives, is "Guidelines for Personal Development."

NMA membership is not required to attend. Attendance will be limited to 350 so registration should be made well in advance. Fee of $6 covers both conference and luncheon.

Registration forms and brochures are available from Helen Cook, ext. 3146, Kearny Mesa.

Eight Teams Complete Workshop In Value Engineer Principles

Forty Convair division men and a San Diego State College professor have been awarded certificates on completion of a two-week value engineering workshop at Kearny Mesa in which they learned and then applied VE principles in production hardware redesign exercises.

Members of the teams calculated that design changes evolved from their studies, if found to meet reliability requirements and implemented, could result in an eventual saving of more than $2 million.

L. I. Medlock, quality control director, presented certificates and was guest speaker at graduation exercises March 17 in CRA Clubhouse.

Everett Lindem of educational services Dept. 130-3 was workshop coordinator and E. D. Heller, manager of cost reduction and value control, briefed the group on value engineering philosophy.

The San Diego State College professor attending as a Convair guest was Dr. Edward Aguirre, assistant professor of industrial arts. Project leaders for the eight workshop groups were E. B. Potter of Dept. 961-8, R. A. Smalley of Dept. 506-1, T. L. Cross of Dept. 403-3 and B. J. Handwerker of Dept. 493-0.

Army Range Measurement System equipment was evaluated by three of the teams, Centaur-Surveyor hardware by two, an Army automated target mechanism by one and Navy Mark 56 mine assembly parts by two.

Members of the workshop teams and their department numbers were:

Team 1—Marvin Jordan, 491-0; L. G. Devlin, 810-0; James Schukantz, 542-0; J. J. Szakacs, 512-2, and R. J. Hendrickson, 144-1.

Team 2—R. N. Hagar, 578-5; D. C. Jervis, 250-2; K. T. Kennedy, 810-1; R. A. Ackley, 142-1, and H. D. Marshall, 578-4.

Team 3—Edward Aguirre, SDSC; R. D. Gilfillan, 543-2; Joseph Marzza, 780-2; H. L. Bain, 810-1, and R. E. Frazier, 250-2.

Team 4—D. L. Hodsdon, 954-0; Eldon Isham, 835-2; Douglas Dickens, 578-4; G. J. Schroeder, 565-1, and V. J. Tarantino, 810-0.

Team 5—Frank Bench, 491-0; A. B. Lutterman, 561-0; A. M. Smith, 810-0; T. L. Stalcup, 578-5, and R. B. Bailey, 835-5.

Team 6—R. T. Anderson, 572-0; J. P. Banks, 532-1; C. W. Glasgow, 840-3; R. W. Young, 191-0; Robert Carswell, 834-2, and Charles Engelbretson, 834-1.

Team 7—Ray Adsit, 572-1; M. B. Dolphin, 142-1; R. L. Eastberg, 840-3; D. L. Ingram, 491-0, and W. O. Mitchell Jr., 561-0.

Team 8—R. A. Clement, 512-0; R. T. Gaughen, 810-0; W. R. Horning, 780-2; C. J. Kropp, 572-1, and J. L. Beck, 493-0.

Coordinator

Betty Decker Plays Key Role In Air-Ground Search Missions

Once a hiker and skier, Betty Decker, clerk in material stores at Pomona division, still goes to the mountains, but now she is usually over them rather than on ski slopes.

She is one of the few women to attain first lieutenant rank in the Civil Air Patrol, California Wing.

Although not a pilot herself, she has been involved in about 50 search or emergency missions in the last four years and has spent more than 200 hours in the air during weekend duty.

The "wildest" experience was crossing the mountains in a fierce windstorm, carrying serum for a seriously ill child at Blythe, Calif.

"Major Del Rokes was flying the single-engine CAP plane and I was holding the serum. Coming through San Gorgonio Pass was a rough experience. I thought any instant we would be blown into the mountain side.

"Funny, I wasn't as scared at the time as I was the next day thinking about it!"

PLOTTING—Betty Decker, Pomona division Dept. 4, serves as lieutenant in Civil Air Patrol during spare time.

Plant Eng. Manager To Present Paper

W. J. Stanley, manager of plant engineering for Convair division, will present a technical paper on "Organizing for cost effectiveness in plant engineering" at an American Society of Mechanical Engineers plant engineering and maintenance conference April 10 in Detroit.

He also will be speaking April 14 at a Work Factor Associates of the West Coast spring conference in Los Angeles on "Setting the scene for indirect labor work management."

Jai Alai 'Package' Offered at Discount

A Jai Alai games and dinner "package" with a value of $9 can now be purchased for $5 at all employe services outlets. Included are tickets for two margaritas, a complete dinner with wine and a choice reserved seat, games program and players' sketchbook.

Employe services offices also have regular Jai Alai games coupons offering discount of 50 cents for reserved seats and $1 for

CAP Cadets Pay Visit To Convair Plant

Twelve Civil Air Patrol cadets from Squadron 99 in Clairemont and Flight 140 in Poway were guests of Convair division for a tour of the Kearny Mesa plant March 22.

Valdemars Graudums, a design draftsman in Convair Dept. 566-3, is commander of Flight 140 and Donald L. McCrary, a design draftsman in Dept. 961-2, is military education officer for Squadron 99.

Convair Archers Set First Shoot

The newly-activated CRA Archery Club will hold its first shoot this Sunday, April 9, at CRA Missile Park. An instruction session at 1 p.m. will precede the competitive shoot. Bows and arrows will be available for those without their own equipment. All General Dynamics people and their families are invited.

Next business meeting will be April 14, 7:30 p.m., Room C, CRA Clubhouse.

Kesler Installed As C of C President

Robert D. Kesler, metallurgical engineer in Convair's Dept. 572-2, has been installed as president of the Old San Diego Chamber of Commerce for the coming term of office. Both Kesler and his wife have been active in Old Town activities, especially the annual Art Festival. Special emphasis of the Old San Diego CC this year will be placed on preparations for participation in the City and State Bicentennial Celebration.

Veteran Assembler Will Appear on TV

H. W. Arnold, Convair Dept. 041-0 assembler, will be featured on an upcoming San Diego State College "Profile" television program on aircraft of the 1919-28 time period.

The program, titled "Winged Classics," will be telecast at 9:30 a.m. April 16 on Channel 10 in San Diego, at 7:30 a.m. April 23 on Channel 4 in Los Angeles and on 20 other stations across the continent and in Hawaii and Europe.

Arnold, a 27-year Convair employe and historian and photographer for the San Diego Chapter of the Antique Airplane Association, will be interviewed by Prof. R. E. Lee of the college radio and TV department. A film strip will show John Sommerfeld of General Atomic division at the controls of an Aeronca K.

Auto Keys Among Lost-Found Items

A number of people at Lindbergh Field plant managed to get home somehow without their car keys, judging from the number that have been turned into the employe services desk, Bldg. 16.

Besides a wide assortment of car and house keys, "found" articles on hand include several pairs of eye glasses, women's gloves, two wedding rings—one, a woman's, and the other, a man's—a man's grey sweater, and an envelope of Boy Ccout Pack 295 cards.

Owners may claim their belongings from Betty, ext. 430, LF.

CRA ROCKHOUNDS SLATE ELECTION

CRA Rockhounds will elect officers at a meeting at 7:30 p.m. April 12 in CRA Clubhouse auditorium.

The Rockhounds are planning a trip to Gold Rock Ranch in Winterhaven, April 15 and 16, for the San Diego County Rockhounds' Roundup.

GD Men Take Part In VE Workshop

Five Convair division representatives Saturday (April 1) participated in a value engineering workshop and seminar for San Diego area small businesses.

The seminar was sponsored by the San Diego Chapter of the Society of American Value Engineers and was held in the Islandia Hotel. L. G. Curtis of Convair's Dept. 561-0 was general chairman.

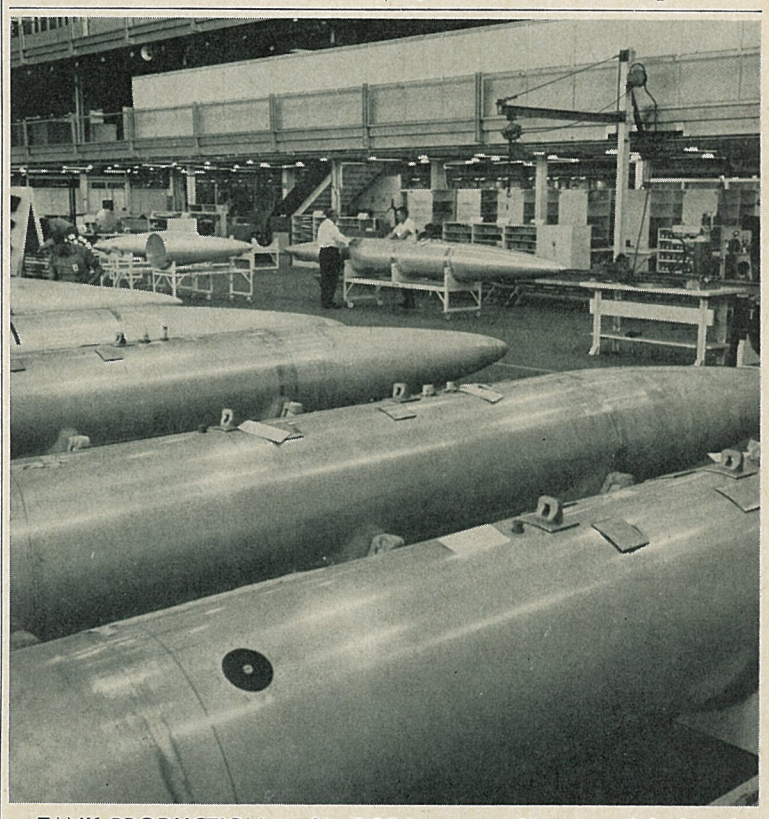
Serving as guest speakers were E. D. Heller, Dept. 192-0; H. P. Williams, Dept. 561-0; E. A. Lindem, Dept. 130-3; and W. J. Ridge, Dept. 192-0.

Rickert Nominated For Jaycee Honors

David R. Rickert, a senior electronic data processing programmer in Convair Dept. 170-1, will have his biography included in the 1967 edition of "Outstanding Young Men of America."

He was nominated earlier this year by the Poway Jaycees and approved by the publication's national board of editors.

Rickert has been a Convair man 10 years. He helped organize the Poway chapter and is now serving as its internal vice president.



TANK PRODUCTION — Six F-106 supersonic external fuel tanks, some of first to go to Air Force, are in foreground in view of F-106 production area in AF Plant 19 at San Diego. Tanks were shipped from Convair plant late last month.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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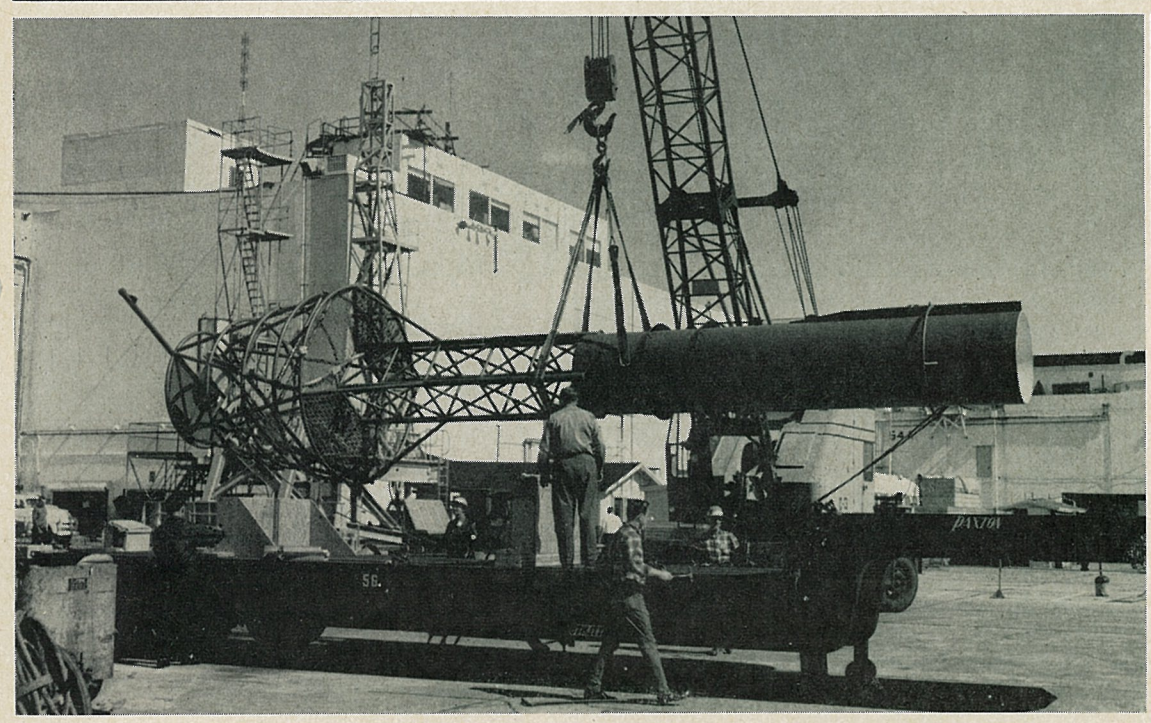


CROSS-COUNTRY MOVE—Convair-designed and built superstructure for Coast Guard sea buoy is swung onto flat bed truck early this month for trip across country to Groton, Conn., where it will be mated with buoy hull.

SLV-3 Will Boost Lunar Orbiter 4

Atlas SLV-3 No. 5804 is being readied by Convair personnel at the Eastern Test Range to start NASA's Lunar Orbiter 4 on its way from Complex 13 to photograph polar regions of the moon.

Orbiter 4 will be sent into lunar trajectory by an Agena D second-stage vehicle and will be the first to survey the moon from a near-polar orbit.

Jim Von der Wische, Convair program manager for NASA Atlas SLV-3 programs, said NASA plans call for the spacecraft to have a 12-hour orbit at 85-degree inclination — compared with a 3½-hour orbit at 21-degree inclination for Orbiter 3.

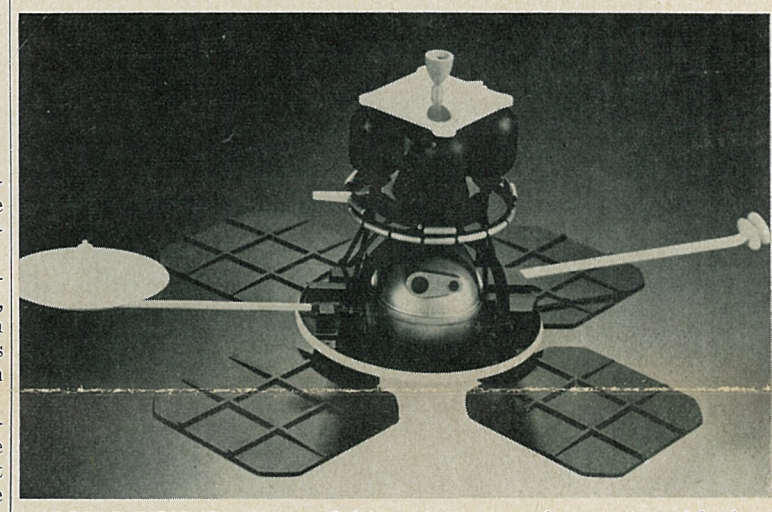
The orbit planned will have a 2,500-kilometer perigee and a 6,300-kilometer apogee, compared with Orbiter 3's 40-kilometer perigee and 1,850-kilometer apogee.

Cameras on Orbiter 4 will be aimed continuously at sunlit areas on the lunar surface.

Joint flight acceptance composite tests for the Atlas, Agena and Orbiter 4 are scheduled next week at the Cape and a simulated launch demonstration May 1.

William Phillipp will be Convair test conductor with William Apfel and Glen Baxter as assistants.

Convair has an 11-man team with Von der Wische at the Cape this week for an equipment assessment and flight readiness review. Members are Harlow Minch, Francis Cook, Leroy White, Charles McLean, James Ross, Jack Taylor, Floyd Manning, C. W. Aulgur, A. G. Haury, George Jerahian and J. E. Hangartner.



POLAR BOUND—Lunar Orbiter 4 spacecraft, soon to ride into space atop Convair's Atlas SLV-3 No. 5804, will be first to photograph moon from lunar polar orbit.

Dynamics Sons, Daughters Win In Science Fair

Thirty-one General Dynamics sons and daughters won awards for their exhibits in the annual Greater San Diego Science Fair April 5-9. Altogether, 50 young people from Convair, General Atomic, and Electronics exhibited.

General Dynamics winners in the senior division, were: Clifford Brown, first place, botany; Linda Peck, second, microbiology; Carl Warner, first place, earth science; Gary Mastny, second place, physics; Scott Breeden, second place, mathematics; Everett Boyer Jr., second place, mathematics; Martha Lynn Seely, third place, mathematics.

Junior division winners were: Janis Stiltanen, third place, botany; Louise Gerdes, second place, medical science; Alida Rol, first place, psychology; Joseph Marino, first place, earth science; Peggy Nishida, first place, geology; Charlene Herring, third place, geology; Susan Fleury, first place, physics; Donald Risty, first place, physics; Linda Sprague, second place, physics; Teresa McKinley, second place, physics; Kim Hujsak, third place, physics; Cherie Tuckfield, third place, physics; Michael Eaton, Marilyn Qua, first place, electronics; Deborah Kolek, Kip Harrington, and Robert Williams, second place, electronics; Larry Tonar, James Leger, third place, electronics; Glen Evans, third place, engineering; Penelope Parsons, first place, mathematics.

Professional society awards went to: James Brous, American Society for Metals; Mary Elaine Chafey, American Society for Metals; Michael Eaton, IEEE, San Diego Engineering Council, Silver Gate Lions Club; Louise Gerdes, San Diego Nutrition Society; Kip Harrington, IEEE, Society of American Value Engineers; Kim Hujsak, American Society of Mechanical Engineers; Holly Kossyta, SD County Psychological Assoc.; Gary Mastny, Fred H. Rohr Science Award; Carl Warner, American Society of Civil Engineers, Scripps.

Counselors from General Dynamics included E. W. Carlson, Convair engineering specialist; James W. Crooks, Electronics staff specialist; Peter Gantzel PhD, Howard Saltzburg, PhD, chemists, George Hinman PhD, Joseph N. Smith, Jack White PhD, and Robert A. Meyer PhD, physicists, all of General Atomic.

Coast Guard Buoy Mast Sent to Electric Boat

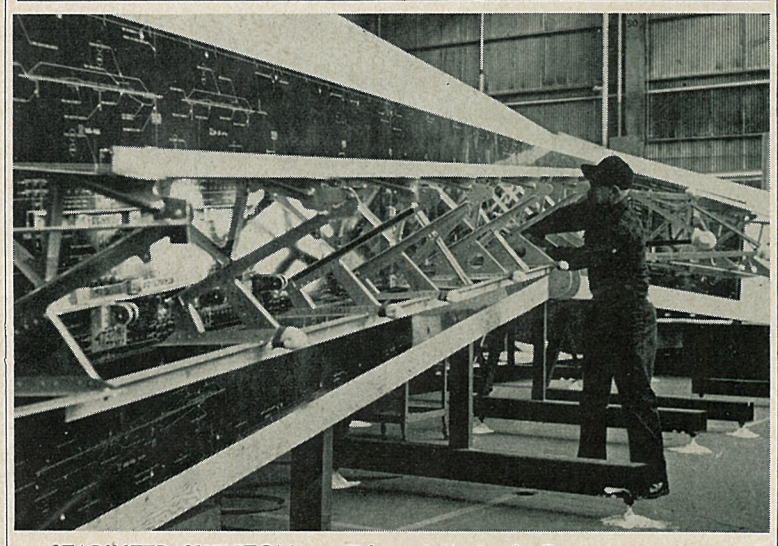
The red superstructure destined for a U.S. Coast Guard sea buoy left Convair's Lindbergh Field San Diego plant the first part of this month, securely chained and blocked on a flat bed truck for its cross-country journey to Electric Boat division, Groton, Conn.

The 33-foot mast left San Diego April 4 and reached Groton last week, according to D. B. Dewey Jr., Convair project manager for the Coast Guard buoy. He and W. T. Dorrance, Convair director of special programs, met the truck at Groton. Dorrance has overall cognizance of Convair's buoy programs which are under direct supervision of Robert Devereux.

Associated equipment, including batteries, engine modules, and fog signal, were shipped on the same flat bed. Electronics equipment and lights left by van later the same week.

Integrated tests of all electronic systems and components were run in the experimental yard at Lindbergh Field plant before shipment, exactly as if they were installed in the buoy. Monitoring

(Continued on Page 2)



STABILIZER SKELETON — Edward Umlauf, Convair mockup mechanic, works on structure for C-5 horizontal stabilizer mockup being built at Lindbergh Field to proof out harnesses and tubing.

Mockups Nearing Completion At LF on Stabilizers For C-5

Inner workings of the C-5 vertical and horizontal stabilizers will be exposed on mockups now nearing completion at Convair Lindbergh Field plant for proofing of harnesses and tubing.

Proofing articles duplicating major portions of both stabilizers are going together at the north end of Bldg. 4 with mockup mechanics now finishing the structures. The "skeleton" vertical is 45 feet long, about 90 per cent of the actual stabilizer excluding the leading edge. It will include structure for part of the bullet and pivoting section.

The horizontal mockup duplicates the sweepback of the rear spar, extending 60 feet across the building.

Optimum harness and tubing routing will be determined in support of production of the huge empennages. All hydraulic, pneumatic, and electrical tubing will be mocked up and proofed out on the make-believe stabilizers before it is installed in production C-5 stabilizers on the line.

Dummy control systems will be installed in the structures so that tubing may be routed around interference items and fastening points established for installation.

Experimental department under Clarence Strand, foreman, is responsible for building the fixtures and structures, and will install the tubing. Structures probably will be ready for installation of the cables by the middle of May.

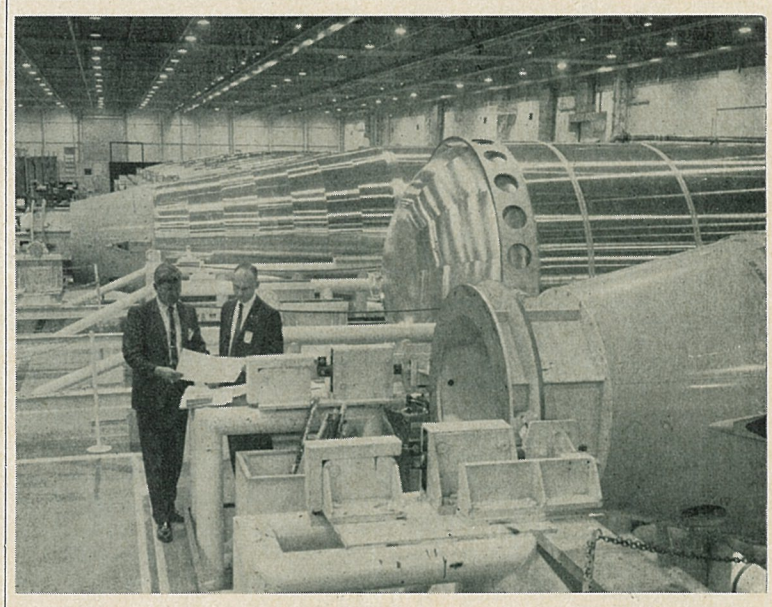
SD's Chamber of Commerce Honors Convair For 'Trying San Diego First'

Convair division was honored for its "Try San Diego County First" program participation at an April 13 civic luncheon sponsored by the San Diego Chamber of Commerce.

A plaque from the Chamber's "Try San Diego" committee and a resolution adopted by the County Board of Supervisors were presented to Jack L. Bowers, Convair general manager. T. M. Heggland, County Admin. officer, made the presentation.

Guests at the luncheon, in addition to Bowers, included Elwood D. Bryant, vice president-operations and Harvey E. Moose, director of material. Bryant is a member of the Chamber's board of directors.

Convair was cited for purchase of materials totaling more than $12 million last year from 800 suppliers in San Diego County. Of the total, 663 were small business firms and 137 large businesses.



'LONGEST ATLAS' — Convair's first Atlas SLV-3A (background) has gone into final assembly dock at Kearny Mesa plant. Discussing assembly plans, left to right, are Walter Lippert, operations project representative, and Joseph W. Coddou, production program manager. SLV-3A is 117 inches longer than its predecessors and will carry an additional 48,000 pounds of usable propellants. Also shown (center) is part of Convair's second Atlas SLV-3C and (right foreground) part of handling fixture for SLV-3 No. 5103.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between April 15 and April 30.

Forty-year: Dept. 401, H. W. Meyers.

Twenty-five-year: Dept. 001, C. G. Earp; 002, N. J. Perkovich; 031, L. A. Quick, Ruby Williams; 056, L. Bordelon; 130, F. W. Green; 250, L. N. Henry, W. C Gish; 401, J. H. Elms, H. W. Riley; 524, Hazel A. Stone; 581, R. C. Lingley; 761, A. W. King; 957, C. M. Hooper; 978, H. P. Lipp.

Twenty-year: Dept. 016, J. Velasquez; 059, J. M. Rivera; 130, H. W. Gillespie; 149, W. E. Blake; 250, J. D. Burrows, C. E. Davis; 584, G. B. Nicoloff; 810, B. W. Gruber; 831, T. C. Ashby; 832, M. Burright; 835, H. C. Van Buren Jr.

Fifteen-year: Dept. 024, W. Willett; 130, J. B. Hammitt; 149, Bonnie W. Lowell; 250, R. Greer; 410, G. W. Stebbins; 508, E. L. Crawford; 512, Carroll M. Kerby; 518, Evelyn M. Bailey, Mae J. Sutton; 543, C. R. Lewis; 551, L. W. Buser; 715, J. A. Pinson; 756, W. A. Martin Jr.; 761, D. R. Conk; 780, Josephine P. Holley; 835, D. W. Russell; 850, F. H. Branscom, G. W. Cowan; 855, W. Bachman; 953, J. P. Schreffler; 957, S. A. Reeve; 966, Viviette V. Larsen; 967, A. L. Bergtold.

Ten-year: Dept. 020, R. D. Hansen; 031, R. S. Parrish; 058, F. H. Weaver; 101, Elizabeth Tyler; 113, L. V. Kaserman, R. D. Qua, K. R. Tucker; 141, R. Kolek, J. Zoll; 142, B. P. Grisafi; 143, J. A. Della Torre, Josie F. Eller, V. M. Frankfather; 144, R. E. Herold, D. S. White; 149, Helen A. Arrechea; 194, E. D. Doyle; 195, Maxie Ann Garceau; 250, J. L. Aiken, H. L. Boyd, H. C. Garland, P. Negro, W. W. Schmidt, A. Todd Jr.

Dept. 300, R. A. Hartfield; 460, H. H. Betts, J. W. DeWitt; 512, J. R. Hunter; 517, A. A. Adams; 545, W. C. Keefer; 562, W. C. Hansen; 587, R. S. Wilson; 592, J. E. Hall; 764, K. Waggoner; 780, Bessie S. Bower, F. J. Rivard; 830, Catherine L. Hernandez; 831, N. A. Sulek; 832, Patricia A. Gicante, F. Q. Hasman Jr.; 833, Lillie Lamb; 840, Margaret J. Trecek; 850, E. Bender: 951, J. D. Cone; 957, S. R. Kirchmann, K. A. Westover; 979, R. D. Beasley, L. W. Brooks, J. T. Hazelgrove, R. Pelletier, M. F. Sargent, J. H. Seymour, M. L. Stark, Julia J. Urban; 985, D. K. Jaeger, E. T. Reese Jr.

STROMBERG-CARLSON

Ten-year: Dept. 84-12, V. J. Johnson; 85-10, E. W. Dawson; 86-24, J. S. Holt.

Personals

CONVAIR

We wish to thank our many friends at Convair for their acts of kindness during the illness and at the death of our son, Marvin Schwenke. The beautiful floral tribute, cards, and expressions of sympathy are sincerely appreciated. Special thanks are extended to those who donated blood in our son's name.

Mr. and Mrs. William Schwenke
Dept. 250-1

* * *

We wish to thank our many friends at Convair for their expressions of sympathy and kindness at the recent loss of our son, Mark.

Mr. and Mrs. N. J Rutherford
(Dept. 126-0)

* * *

I wish to express sincere thanks to all my Convair friends and to the Convair Management Club for the flowers, cards and acts of kindness upon the death of my brother, Marvin.

R. A. Dirkschneider
Dept. 850-0

* * *

Thank you for the many cards and flowers received during the illness and upon the death of my husband, Frank Marchant (Dept. 131-7).

Mrs. Marie Marchant

* * *

We wish to thank Convair friends for their thoughtfulness at the death of our husband and father, Edward J. Sweeney, retired from Dept. 3-1.

Mrs. Agnes Sweeney and son.

Retirements

CONVAIR

ARMSTRONG—Frank L., Dept. 756-0. Seniority date Aug. 6, 1956, retired March 31.

CATTON, Eugene Sr., Dept 024-2. Seniority date May 24, 1940, retired March 31.

FITZGERALD—Martin, Dept. 756-0. Seniority date Aug. 26, 1946, retired March 31.

GENERAS—Edward C., Dept. 420-0. Seniority date June 1, 1959, retired March 31.

MILLER—Kingdon A., Dept. 420-0. Seniority date Oct. 14, 1935, retired March 31.

SEEDORF—Jack H., Dept. 833-2. Seniority date April 5, 1959, retired March 26.

SHIPMAN—Granville G., Dept 015-0. Seniority date Sept. 14, 1942, retired March 31.

WILLIAMS—Frank N., Dept. 507-0. Seniority date Feb. 25, 1941, retired March 31.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending March 31.

Dept. 005-0, E. C. Krueger, R. G. Powers; 015-0, C. W. Thompson; 027-0, J. F. Meller Jr., F. J. Serio (two awards), G. Simpson; 031-0, H. J. Liggett; 141-3, D. G. Rice; 143-0, P. H. Milne; 143-1, M. E. Howell (two awards), V. P. Hunt, W. D. McNeil; 144-1, G. R. Gray; 144-2, J. G. Roersma; 191-0, H. G. Cooper: 452-0, R. G. Bostrom; 454-0, M. B. Watling; 519-0, J. H. Kersey Jr.; 562-1, D. F. Slavens; 578-1, J. A. Denneny Jr.; 715-0, F. E. Hitchcock; 756-0, T. I. Jaramillo; 759-0, N. V. Byrd, W. A. Fields, B. F. Fuller, G. D. Lundquist, F. A. Silvas, G. W. Stacy Jr. (two awards); 761-0, L. L. Ripley; 780-1, M. E. Stoltz; 834-1, A. O. Rodgers; 957-0, J. A. Madden; 987-0, W. L. McDougal.

VANDENBERG AFB

Dept. 985-12, H. A. Kamman; 985-13, F. B. Cochran.

Awards approved April 7.

Dept. 001-0, D. F. Hitson; 144-2, D. C. X. Gonzalez, S. G. Jenkins; 250-1, M. E. Nicolet; 250-3, B. A. Rusk (two awards), W. J. Wissinger; 454-0, R. K. Arii, A. A. Carlson (two awards); 524-0, M. M. Dumler; 547-3, E. C. Madsen; 715-0, J. Friel, C. E. Schultz; 733-0, C. W. Maxfield, S. S. Serrano; 761-0, B. K. Gingery (two awards); 810-0, T. A. Crosby; 831-0, G. L. Sandoval, L. Von Tungeln (three awards).

Papers Presented

CONVAIR

CHRISTIAN—Jack L., Dept. 572-1. "Problems, Properties and Selection of Structural Metals for Use in a Cryogenic Environment." American Society for Metal's Symposium at the WESTEC Conference, Los Angeles, March 15-16.

DETHLEFSEN — R., Dept. 596-0. "Cathode Spot Phenomena of Pulsed Vacuum Arc Utilized for Electric Micro-Thrustors." AIAA, ASME 8th Symposium on Engineering Aspects of Magnetohydrodynamics, Stanford University, March 28-30.

FAGER — John A., Dept. 512-2. "Large Space Erectable Structure Problems." AIAA 8th Structures, Dynamics and Materials Meeting, Palm Springs, March 29-31.

RIDDEL—W. C., Dept. 586-0. "Navigational Aid for Manned Interplanetary Flight." ION 1967 National Space Meeting, Los Angeles, March 14-15.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Monday, May 1. Lindbergh Field, ext. 491. Bldg. 14 auditorium, 8 a.m. and 4:30 p.m., Tuesday, April 25.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931, Kearny Mesa.

Rider-Driver

CONVAIR

PASSENGER WANTED — El Cajon Blvd. and Marlborough, 7 a.m. to 3:30 p.m. shift, Lindbergh Field plant. Call Loralee, ext. 1328 LF.

RIDE WANTED—From 4970 Santa Cruz, Ocean Beach, to Kearny Mesa, 7 to 3:45 shift. Phone Velma Klees, 222-4748, or see at KM cafeteria.

RIDE WANTED—Santee to Lindbergh Field, 7 to 3:30 shift. Phone Janice Cope, ext. 1020 LF or (home) 448-4054.

Deaths

CONVAIR

JORDAN—Alphonse, Dept. 015-0, Died March 26. Survivors include his wife, Theresa M.

MARCHANT—Frank A., Dept. 131-7. Died April 3. Survived by wife, Marie B.; daughter, Beverly Perkins; mother, brother, sister, and one granddaughter.

RUDIS—J. T., Dept. 531-2. Died suddenly April 9. Survived by wife, Lelah, Convair Dept. 127-0.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N.Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

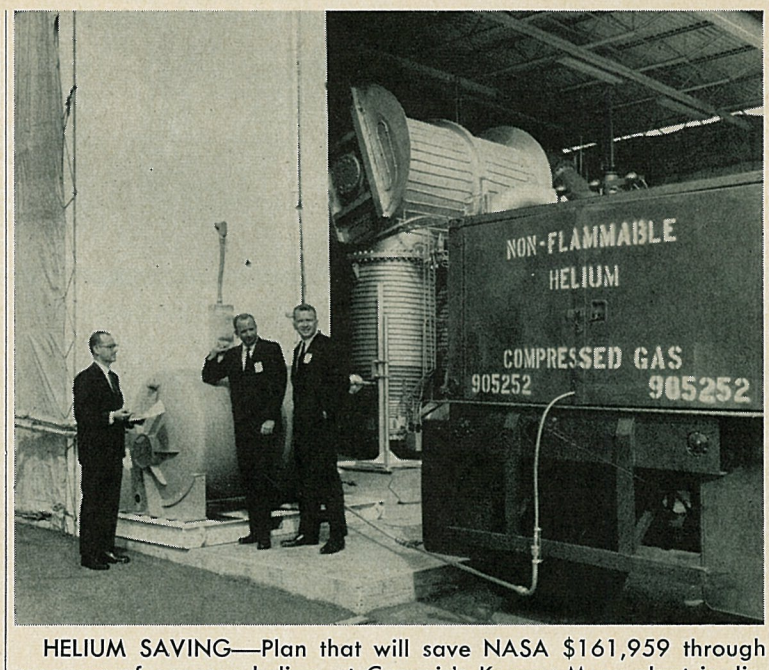
Coast Guard Mast Sent to Groton For Mating to Hull

(Continued from Page 1)

the checks was the crew under R. J. Dunn, group engineer, who has had the entire engineering responsibility for the Coast Guard buoy. They include D. K. Hall, F. G. Brickson, and Richard Sholly, senior engineers, and Roger Hollings, draftsman.

The superstructure will be mated to the buoy hull, now under construction at EB. Instrumentation will be installed under Convair direction. Completion date is set for June 21.

The Coast Guard navigational sea buoy will replace a lightship formerly located off Sandy Hook, N.J. The buoy will serve as an aid to marine navigation as well as a data station for recording and transmitting oceanographic and weather data to shore.



HELIUM SAVING—Plan that will save NASA $161,959 through recovery of gaseous helium at Convair's Kearny Mesa plant is discussed by, left to right, R. T. Tuttobene, test lab group engineer; E. R. Peterson, vice president-research and engineering; and Richard Jumont, assistant chief of NASA Lewis Research Center resident office.

CRP For Recovery and Reuse Of Helium Earns Cost Honor

R. T. Tuttobene, Convair Dept. 578-1 test lab group engineer, has been awarded a commendation certificate for a cost reduction proposal that has led to recovery and reuse of gaseous helium after it has been used for tests in a spacecraft laboratory vacuum chamber at Kearny Mesa.

Reprocessing and reuse rather than venting it to the atmosphere will save NASA an estimated $161,959 during tests on two airborne relief valves for the Saturn 4B that are being conducted by Convair under subcontract from Douglas Aircraft Co.

Douglas has underwritten the $3,695 implementation cost, which included running pipelines from the spacecraft chamber at Bldg. 28 to a gas recovery system in the vibration lab in Bldg. 15 at Kearny Mesa and back.

Tuttobene, a Convair employe since 1955, is responsible for operation of the division's liquid hydrogen and high energy propellant test sites and thermodynamics, aerodynamics, gas flow, hydraulics and mechanical laboratories.

Two cost reduction proposals that he initiated last year saved the division an estimated $81,945.

RING SAVINGS — R. W. Harris, left, technical buyer in Convair's Dept. 810-0, and Roger C. Lynch, Mark 56 mine program manager, look over rolled mechanism compartment mating ring for mine. Harris' proposal for use of rolled rings will save $178,643.

Material Dept. Cost Reduction Effort Tops Goal by 26 Per Cent

Convair division material department's cost reduction and value control savings for the first quarter this year totaled $1,223,067—a 26 per cent increase over the department's $969,650 goal for the three-month period.

The savings resulted from more than 100 cost savings projects and included $932,149 from cost reduction and $290,918 from value control projects.

Highest single project saving of $178,643 was originated by R. W. Harris, a technical buyer in Dept. 810-0, and resulted in use of rolled rather than forged mechanism compartment mating rings for Navy Mark 56 mines.

"We have a good start on our cost reduction program this year," H. E. Moose, material department director, said. "However, the real challenge lies ahead. Our goal will be double during the second quarter. It will take the hard-driving initiative of every member of the department, working in close coordination with other company personnel, to accomplish this.

"Every dollar of material cost reduction contributes to our competitive position," he said. "The material department is responsible for a significant portion of the division expenditures. This makes it especially important that every member of the department be alert to cost savings opportunities."

Rep. Miller Will Address Club On Space Missions and Goals

Six hundred Convair Management Club members will fill the HMS Bounty Room at Hilton Inn Friday evening to hear Rep. George P. Miller (D-Calif.) discuss legislative responsibility in evaluating national space missions and goals.

Miller is chairman of the House Committee on Science and Astronautics.

Rep. Lionel Van Deerlin (D-San Diego) also will be a guest.

The meeting is sponsored by engineering departments with Dean H. McCoy as program chairman. Social hour will be at 5:30 p.m., dinner at 6:30.

Miller and Van Deerlin will visit the Kearny Mesa plant Friday for a discussion with Jack L. Bowers, general manager, Grant L. Hansen, vice president-launch vehicle programs, and E. R. Peterson, vice president-research and engineering, on Convair products and the division's work on NASA's basic subsystem module and space antenna projects.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Nearly 12,000 Attend Party

More than 11,800 General Dynamics folk attended the five-hour Disneyland family party sponsored April 8 by Convair Management Club—a record attendance for the annual event.

Attending were employes from Convair, Electronics-SD, Stromberg-Carlson, General Atomic, Liquid Carbonic, and Marine Technology Center from the San Diego area, the Los Angeles Material Office, Vandenberg and Edwards AFBs, and the Yuma Proving Grounds.

More than 1,300 made the trip from Convair's Kearny Mesa plant in 33 chartered buses.

Don Evanson, planning committee chairman, said tickets were sold out the day before the event. He commended Sam Catalano, ticket co-chairman, Jim Busby, bus ticket co-chairman, and employes who sold tickets at 29 different locations for their efforts in making the event "a big success."

Keach Transferred From NY to Convair In Material Post

Charles G. Keach this week assumed new duties as manager of Lindbergh Field plant material for Convair division, reporting to H. E. Moose, director of material.

C. G. Keach

W. C. Buxton, chief of Lindbergh Field plant procurement, and J. M. Rogers, chief of Lindbergh Field plant material program control, report to Keach.

Keach has been serving at Corporate Hq. in New York and previously had assignments with the former Astronautics division in San Diego as manager of subcontract administration, manager of procurement, and general purchasing agent.

Before joining Astronautics in 1959, he was employed for 17 years by Northrop Corp.

Staff Attorney For Electronics Named

David A. Rich has joined Electronics-SD operations as staff attorney, according to an announcement by Don C. Prim, general manager.

David Rich

Rich comes to Electronics from Gyrodyne Co. of America, St. James, N.Y., helicopter manufacturer, where he had served as a corporate attorney the last five years.

From 1956 to 1962 Rich was attorney in the office of the house counsel of Sperry Gyroscope Co., division of Sperry Rand Corp., Great Neck, N.Y. Previous positions include a year as attorney-adviser to contracting officer of the New York Ordnance District, Department of the Army, N.Y.

He received his law degree from the New York University School of Law and attended the Judge Advocate General's School, University of Virginia.

Appointments Made In Controller Dept.

Fred N. Minter has been named manager of indirect budgets (Dept. 198-0) and Eugene Fox, manager of direct budgets (Dept. 194-0), for Convair division, Jack L. Bowers, division general manager, has announced.

Both Minter and Fox report to John D. Milling, controller. Minter also continues as assistant to the controller.

TIME CHANGE—Betsy Baker of Electronics-SD shows time to set clocks ahead one hour as Daylight Saving Time goes into effect again at 2 a.m. on last Sunday of month—April 30—in many states where General Dynamics people are employed.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers among General Dynamics divisions. In parentheses are dates when individuals joined the company.)

PAUL L. PELLAND (1964) from Convair division to Electronics, San Diego; **JOHN J. MAROCCO** (1960) from Electronics, Rochester to senior budget analyst, Electronics, San Diego; **JOHN L. HAKES** (1965) from Electronics, Rochester to Electronics, San Diego; **THOMAS A. FULSHAW** (1965) from Dynatronics to Electronics, San Diego as marketing manager-industrial products; **ADOLPH R. PERL** (1946) from General Atomic to Convair as design specialist; **THOMAS G. EXLEY** (1962) from Pomona to salary administrator, Electronics, Rochester; **ROBERT ROSER** (1964) from Electronics, Rochester to Pomona as senior research engineer; **JOSEPH A. JAMES** (1963) from Pomona to cost estimator, Electronics, San Diego.

A. C. VON STERNBERG (1963) from Quincy to Pomona as senior research engineer; **ROGER A. BUJOLD** (1966) from Electronics, Rochester to quality control engineer, Electronics, San Diego; **DANIEL A. McLAUGHLIN** (1962) from Convair to General Atomic; **C. G. KEACH** (1959) from Corporate Headquarters to Convair as manager of Lindbergh Field plant material; **ROBERT W. TRYON** (1959) from General Atomic to senior engineering metallurgist, Convair; **HAROLD H. LANGER** (1956) from Fort Worth to senior design engineer, Convair; **CLIFFORD HEADLONG** (1955) from Electric Boat to Convair as design draftsman; **JOSEPH CATALINO** (1950) from Electronics, San Diego to material liaison man, Convair; **FRANK H. MEARS** (1961) from Fort Worth to Convair as resident representative; **ROBERT M. WRIGHT** (1954) from Corporate Headquarters (Langley) to Pomona as marketing planning administrator.

Quotable Quotations . . .

(From The Notebook of Elbert Hubbard.)

* * *

"If you want work well done, select a busy man. The other kind has no time."

* * *

"Get your happiness out of your work or you will never know what happiness is."

* * *

"Do not dump your woes upon people—keep the sad story of your life to yourself. Troubles grow by recounting them."

* * *

"God will not look you over for medals, degrees or diplomas, but for scars!"

EB High on List

Arleigh Burke Praises Shipyards That Built 41 Polaris Submarines

American shipyards were cited for their role in creating the Navy's Polaris submarine force by a former Chief of Naval Operations early this month.

Speaking at the commissioning of Will Rogers, Adm. Arleigh A. Burke, retired, said: "The Polaris weapon system is a tribute to enthusiastic cooperation from organizations and individuals everywhere.

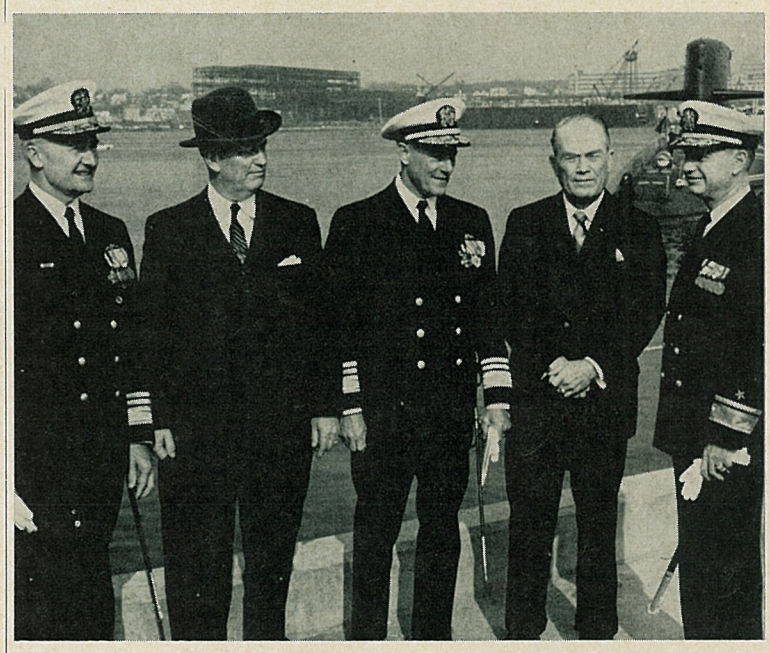
"And this is especially true of the shipyards of this country.

"It is altogether suitable that Will Rogers, the 41st and last of this series of Polaris submarines, should have been built by the Electric Boat division of General Dynamics and commissioned in Groton, Conn., where the first one, George Washington, was commissioned less than eight years ago.

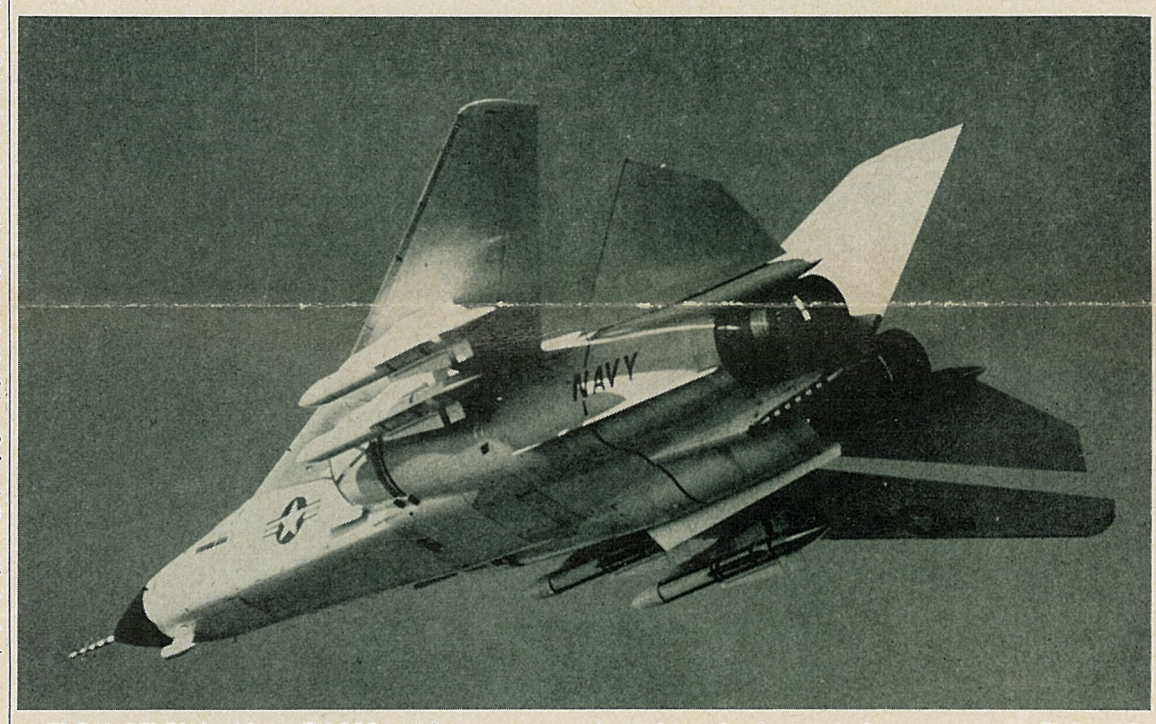
"All of these 41 incredibly complex ships built by many United States shipyards have been highly successful. There have been no failures. These magnificent ships are a tribute to the techniques and skills of the shipyards which constructed them. There are no other shipyards in the world which could have incorporated in these complicated submarines the unusual characteristics which these ships have.

"The shipbuilding industry of this country can take great and justifiable pride in their unique and enormous contribution to the most effective weapon system in the world.

"It would be wise to weigh this actual performance of American shipyards against the criticism heaped on United States shipbuilding capability recently."



POLARIS MILESTONE—Leaders of Navy's Polaris program are shown in front of Will Rogers, fleet's 41st missile submarine, following April 1 commissioning. Left to right, VAdm. I. J. Galantin, Chief of Naval Material and former director of Navy's Special Projects (Polaris) Office; Adm. Arleigh A. Burke, retired Chief of Naval Operations, who initiated Polaris program; VAdm. Arnold F. Schade, Commander, Submarine Force, U.S. Atlantic Fleet; VAdm. William F. Raborn, retired, first director of Special Projects Office; and RAdm. Levering Smith, present director. In background is General Dynamics shipyard where 17 Polaris submarines, including Will Rogers, were built.



FROM BELOW—Navy F-111B, with weapons under wings, is shown during recent test flight. Aircraft are presently undergoing Navy Preliminary Evaluation at Grumman's Peconic River facility and at Naval Air Test Sation, Patuxent River, Md.

Corporate-Wide News in Brief

Atlas SLV-3 readied at Eastern Test Range, Cape Kennedy, to launch Lunar Orbiter 4.

* * *

Initial airborne provisioning completed at Fort Worth for F-111C, Royal Australian Air Force version of variable wing F-111.

* * *

Implementation of Autokon computer lofting technique moves ahead at Quincy division.

* * *

Roger Lewis praises Fort Worth division accomplishments at groundbreaking for new engineering and office building, which coincided with division's 26th birthday.

* * *

Will Rogers, Navy's 41st Polaris submarine, built at Electric Boat division, placed in commission.

* * *

Mast for U.S. Coast Guard sea buoy shipped from Convair to Electric Boat for mating with hull.

* * *

Pomona division places first in National Safety Council ratings for 1966, with index of .08 (number of lost-time accidents per million manhours worked).

* * *

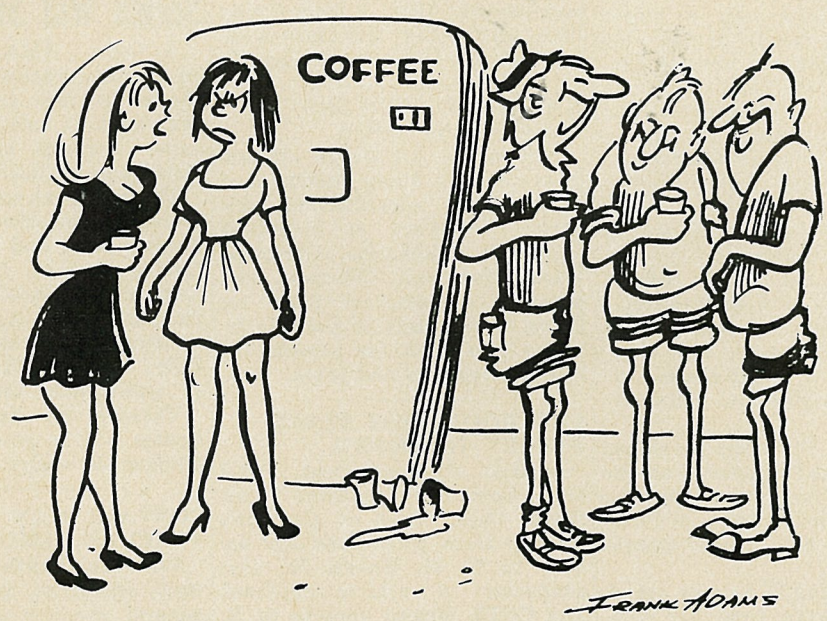
New types of biochemical monitoring systems, developed by Convair life sciences, described at Aerospace Medical Association meeting in Washington, D.C.

* * *

S-C will manufacture and install #5 crossbar telephone switching systems under agreement with Canadian firm.

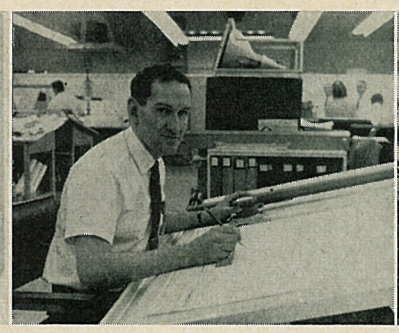
* * *

F-111s, flying from test sites across the nation, near 3,000 flight-hour mark.



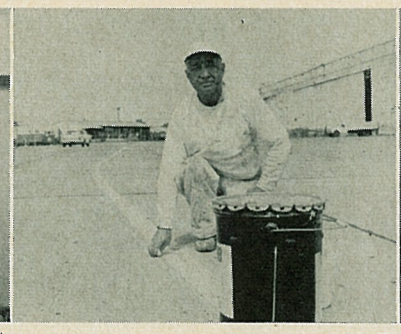
"Don't pay any attention to them . . ."

Norris Atkins, master schedules analyst at Vandenberg AFB, took the grand circuit route to his present home in Lompoc, Calif. Born in Tennessee, he joined the Navy in World War II, had boot training in Chicago where he met his wife, Mildred. He served as a Navy personnel man during the Korean conflict before joining Convair as a flight line mechanic. Later he was a field service rep assigned to Burlington, Vt., Andrews AFB, Md., Clark Field, Philippines, Yokota Air Base, Japan. He reported to Vandenberg in 1962.



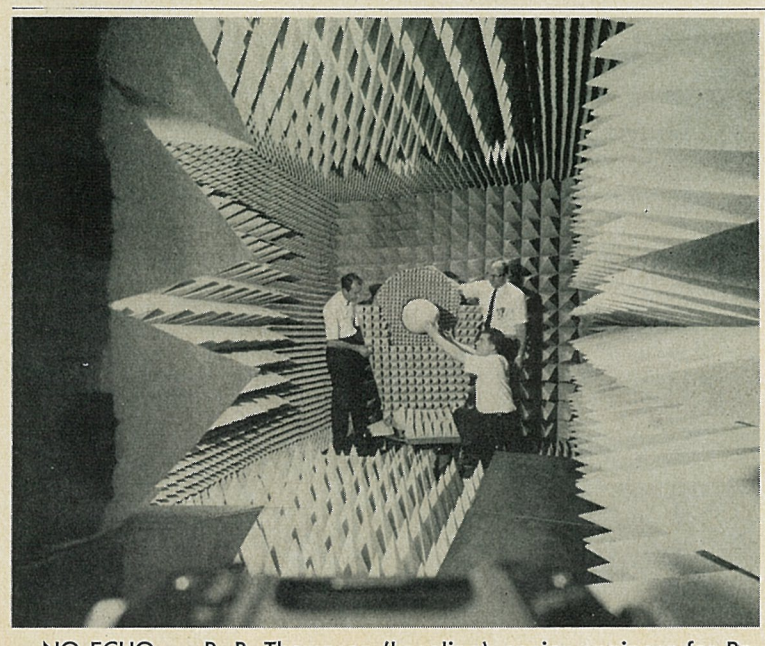
Jim Foulk, design engineer on the A-NEW program at Stromberg-Carlson's Data Products division, works at one of the company's new finger-tip control drafting tables, recently installed for 18 design engineers and draftsmen at the Hancock St. plant. Jim first worked at Data Products in 1960. He left to work as project engineer at Kinetics Corp. in Solana Beach, but "came home" four years later. He, wife Doris, and sons, James, 23, and Ricky, 9, live in Clairemont. Jim claims photography as his main interest.

Lucille Wagner brightens up the purchasing department of Electronics-SD where she has worked as a stenographer since November, 1964. She followed her three sisters to San Diego from Cleveland, Ohio, leaving a secretarial job with Thompson Ramo Wooldridge Inc. to come to sunny California. So far, she says she has enjoyed San Diego "vacationland." She lives in the North Park area and fills her spare time with a wide range of interests — bowling, sewing, painting. She likes to dance, too!



Dave Thorpe, painter at Lindbergh Field plant, was snapped in the midst of restriping roadway lines inside the plant. It takes about 10 days to paint all the white markings. He has been with Convair 19 years and a painter at Lindbergh Field all but six months of that time. He is one of the Dept. 250-3 painters who spend their time "brushing" up the place, inside and out. Dave came to San Diego in 1948 from his hometown, Moreland, Idaho. He makes his home in the East San Diego area on Menlo Ave.

Joe Heriot, Convair Service Center field operations mechanic, has been with the company 26 years. He was in Convair final assembly before going first into Convair field operations and then to the Service Center when it was formed the summer of 1965. He was first assigned to the FAA 880-M when it was in-plant for overhaul. He, wife Joanne, and daughters, Debra, 20, and Geree, 14, live in the Serra Mesa suburb of San Diego. Joe likes to take home movies and improve his customized 1956 Ford.



NO ECHO — R. B. Thompson (kneeling), senior engineer for Pomona division dynamics analysis Dept. 6, checks alignment of Standard ARM radome in anti-echo chamber at Convair's Kearny Mesa plant as Henry Laue, left, and M. M. Chazotte of Convair's Dept. 541-0 watch.

Anti-Echo Chamber Used For Antennas, Radomes

A new microwave anechoic (anti-echo) chamber in Bldg. 33 at Convair division's Kearny Mesa plant enables antenna and microwave engineers to make precise and repeatable measurements on antennas and radomes.

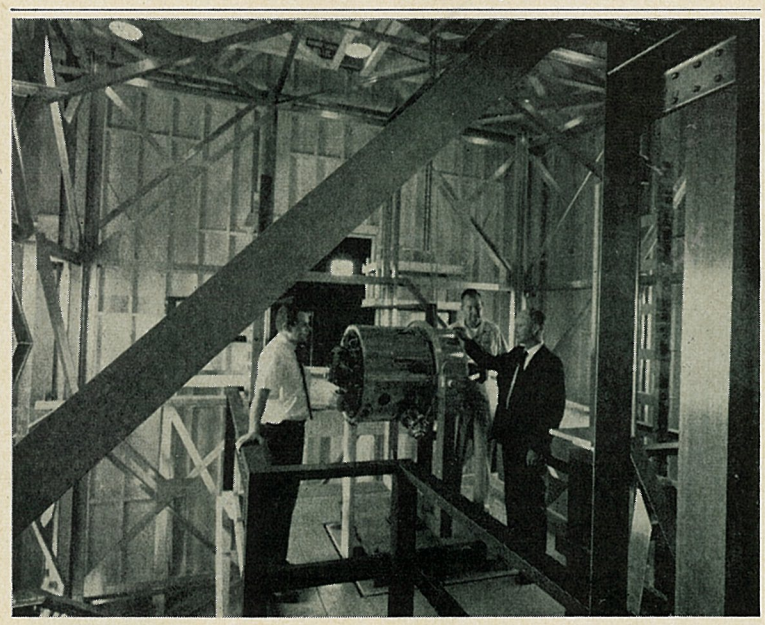
The chamber is called the "blue room" because of the color of the pyramid-shaped sponge absorbers impregnated with graphite with which it is lined.

Milton M. Chazotte, assistant chief design engineer for antenna and microwave Dept. 541-0, said radio frequency (R-F) energy striking the room surfaces is mostly absorbed—with only 1/-100,000 of the total being reflected.

Use of the chamber's R-F reflectionless environment simulates free space and eliminates weather, ground or building reflection problems encountered on outside ranges.

Studies currently under way are in support of Pomona division's Standard ARM (anti-radiation missile) guidance system analyses.

The facility will be used in the near future for phased-array (electronically scanned) antenna studies; antenna feed analyses, including those for NASA and Air Force space-erectable large antenna feasibility studies; and for design of small radomes for aircraft systems.



FIRST TEST—Convair division's new ultra-low magnetic field intensity facility at Kearny Mesa (GD/NEWS, April 5) is being used for first time in test of magnetic characteristics of OV1-86 satellite. Discussing test program with H. K. Hultner, left, systems engineer in Dept. 506-1, are Lt. Col. Clyde Northcott, OV1 program manager for Air Force Office of Aerospace Research, and L. E. Ottem, Convair OV1 program manager.

Musical History

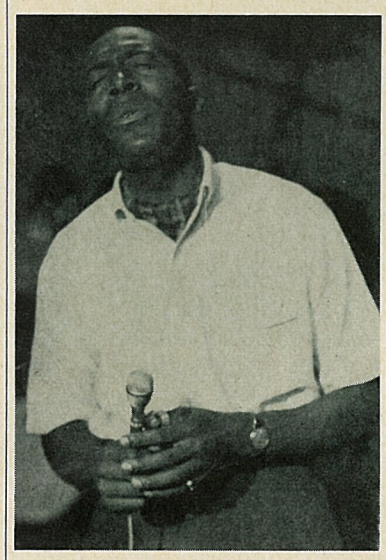
Convair Clerk, Blues Singer, Gets TV Role

Don Early, a Convair facilities control clerk, who began "singing the blues" to himself as a small child and who has been singing to audiences since he was 10, will appear this weekend on a San Diego State College "Profile" TV show.

(April 23, Channel 10, 9:30 a.m.; April 30, Channel 4, 11:30 a.m.)

Early will sing a half dozen selections in a "history of the blues" program narrated by State's Prof. R. E. Lee.

"I can't remember when I wasn't singing. I grew up in a rough neighborhood in Pittsburgh and by the time I was 10 I was begging piano players in honkytonks to let me sing just



AT THE MIKE—Convair's Don Early, shown during filming of "history of blues" TV show.

one song. My mother was dead set against it, wanted me just to sing in church, but I couldn't help it."

Singing with first one band and then another, Early helped support the family during his teens and supported himself during a year at Penn State U. However, the West beckoned and Early found himself in Blythe, Calif. where he remained for two years, attending Palos Verdes College.

He landed in San Diego in 1964 and got a job with Convair.

"It was the night before Thanksgiving. I hadn't collected a paycheck yet and I was broke and homesick but that night I won a talent contest in a downtown club and collected $20!"

Since then Early has developed a following and appeared on the side at various clubs. He also married (a girl he knew in Pittsburgh). They have a baby daughter.

"Can she sing?" he was asked.

"Well, judging from her complaints before the 2 a.m. feeding she has a pair of strong lungs!"

$16,623 in ES Awards Paid in 1st Quarter

Employe Suggestions initiated at Convair division during the first three months of this year will save $149,728, E. D. Heller, manager of cost reduction and value control, estimates.

For the suggestions, employes have been paid awards totaling $16,623. This includes a number of $15 awards for suggestions that have intangible savings or correct safety hazards.

S-C Mgt. Club Plans April 20 Meeting

Stromberg-Carlson Management Club will have Walter Hahn, city manager of San Diego, as guest speaker at tomorrow's (April 20) meeting.

The meeting will be at the Marine Corps Recruit Depot Officers Mess. Social hour is at 5:30 p.m.; dinner at 6:30, and program at 7:30.

A National Management Association film, "Meanings Are in People," will be shown, and Man of the Month award given.

Roy Dieter, Data Products plant engineer, received the award for the month of February for his efforts in coordinating the renovation of the new Data Products' plant at El Cajon.

S-C Folk Will Dance And Dine April 28

Stromberg-Carlson people at both Data Products' plants in the San Diego area will gather for their annual Spring Dance next Friday, April 28, in the Elks' Lodge at El Cajon.

Social hour starts at 7 p.m. Dancing will be from 8 p.m. to 1 a.m. to Bill McEvoy's Quartet.

Dancing will be interrupted from 10 to 11 p.m. for a buffet and raffle.

Price for employes is $1 each, and guests, $2. Tickets may be purchased at Plant 1 from Trudy Rice, Amy Boyer, and Mary Kohler; Plant 2, Dorothy Altschaeffl.

"INDUSTRY OFFICERS" TAKE PLANT TOUR

Fifty-three Air Force officers from the Air Force Institute of Technology's "education with industry" program at industrial firms in California, Arizona, Washington and Colorado, and program coordinators from six firms, were guests of Convair division this week for a series of briefing sessions and tours.

CHECKOUT, TEST STAND REPORT TO BROWN

Vehicle checkout Dept. 763-0 and Combined Systems Test Stand Dept. 764-0 at Convair's Kearny Mesa plant both now report to H. M. Brown Jr., test conductor of vehicle checkout and CSTS. Brown reports to R. A. Clark, superintendent of assembly and checkout Dept. 760-0.

Charter Members Of Mgt. Club Sought

Charter members of Convair Management Club will be honored guests at the club's 25th anniversary observance on June 8.

All who joined the Consolidated Foremen's Club during its first year of existence in 1942, whether they are still with the Company or not, are being contacted. A list of some 300 known names was carried in the March issue of Managair. However, anyone not on the list should contact Jack Bryant, reception chairman. He may be reached at ext. 1749, Lindbergh Field plant, mail zone 016-00.

Letters of invitation also are going to the presidents of other General Dynamics divisions, Ryan Aeronautical Co., Rohr Corp., Solar, Advanced Structures division of Whittaker Corp., and San Diego civic dignitaries.

Record Number Apply For Scholarships

A record 90 applications were turned in by Convair sons and daughters for the Management Club scholarships going this year to the four best-qualified students, M. M. Saunders, chairman of the scholarship committee, said following the March 31 deadline.

Each of the scholarships will be $350, to be applied on tuition and expenses at the university or college of the winners' choice.

The selection sub-committee, headed by Art Braidic, is screening the applications and transcripts. Twelve semi-finalists will be selected by the end of this month.

A committee of civic and education leaders from outside the division will make the final selection of the four winners. Awards will be made in June.

Communication Film Series Will Start

A new NMA film series on Communication, never before shown in this area, will start next week at both Convair plants under auspices of the Convair Management Club.

The one-hour color films, with sound, will be shown Tuesdays at Kearny Mesa and Wednesdays at Lindbergh Field for five weeks. Registration should be made at first showings: April 25, 5 p.m., Kearny Mesa presentation room, Bldg. 2; April 26, 5 p.m., Bldg. 14 auditorium, Lindbergh Field.

There is no charge and certificates will be given to those attending the entire series.

CONVAIR MAN TEACHES SEMINAR

Clarence Smith, Convair fatigue specialist, is conducting a general seminar on fatigue this week (April 17-21) at Kelly AFB, San Antonio, Texas.

Health Club Treadmill Builds up Endurance

General Dynamics employes and family members can run off excess weight without moving from the same location by using a new treadmill at CRA Health Club.

The exerciser was purchased after a three-week trial period in which 134 members "voted" a desire to have it for permanent use.

Ralph L. Mansfield, Health Club director, said the new device is good for circulation, coordination and building up endurance and leg muscles as well as for use in weight control.

The treadmill is equipped with a speedometer to measure miles per hour and cumulative mileage and its belt pressure can be regulated for individual body weight differences.

Mansfield said 257 miles was recorded on the device during its first month of use with individuals averaging 2/10-mile each time they used it.

"It's much more fatiguing than ordinary walking or running," he said.

A six-month trial membership is being offered by the Health Club at $12 for employes and $18 per family. Regular one-year memberships are $18 for employes and $27 for families.

The club is open for "women only" from 9:30 to 11:30 a.m. Monday through Friday and for all members from 11:30 a.m. to 10 p.m. weekdays and from 10 a.m. to 5 p.m. Saturdays.

The club, one of the best equipped of its kind in Southern California, has sauna bath facilities for both men and women. Special exercise programs, tailored for the individual, are provided by the Health Club staff.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111, Kearny Mesa. Deadline for next issue of GD/News is April 25. Call ext. 1071 LF or 3322 KM.)

ADVENTURERS — Meeting tonight, April 19, 7:30 p.m. Demonstration and slides on lightweight camp equipment. Open to the public. Weekend trip to Clark Dry Lake April 29-30.

BONAIR FLYERS—Fly-in to Riverside Airport April 23. Meeting May 2, CRA Clubhouse.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BOWLING—Plant bowling championship tourney April 22-23, 29-30, Pacific Rec.

BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS—Meeting Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS—Meeting tonight, April 19, 7:30 p.m., Convair cafeteria, Lindbergh Field.

CONVAIRIDERS—50-mile ride to Lakeside, Saturday, April 22. Leave flagpole in front of Bldg. 2, Kearny Mesa, at 8 a.m.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Meeting May 3, 7:30 p.m., Floral Association Bldg., Balboa Park.

ICE SKATING—GD skate nights Thursday, 6:15-7:45 p.m., Mission Valley Ice Arena.

PISTOL CLUB—Regular club shoot April 23, 9:15 a.m., SD Police Pistol Range, Home Ave. & Federal Blvd.

RADIO—Meeting April 20, 7:30 p.m., CRA Clubhouse.

RIFLE CLUB—Senior shoot April 26, 7:30 p.m., Gillespie Field Range.

ROAD RUNNERS—Meeting April 27, 7:30 p.m., Gillespie Field Clubhouse.

SKI CLUB—Meeting May 2, Catamaran, 8 p.m.

TENNIS—Beginners course starts May 9. Call Bob Herold, ext. 2035 KM, or Jim Jobe, ext. 3468 KM.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

TRAVELERS—Meeting May 2, 7:30 p.m., CRA Clubhouse.

WIVES—Potluck April 26 CRA Clubhouse.

Bargain Tickets

(Following are bargain-rate tickets currently available to employes. Unless otherwise stated, they are offered at employe services offices of Convair, Stromberg-Carlson, Electronics-SD, Bldg. 51 engineering mailroom, Lindbergh Field, H. C. Medearis' office at AF Plant 19, and CRA Clubhouse.)

* * *

"A Musical Night to Remember" with San Diego Youth Symphony, San Diego Honor Youth Chorale and guest artists, 8 p.m. May 7, Civic Theatre. Discount tickets, adults $1.25, students 75 cents (25 cent reduction). Deadline April 28.

* * *

"Never Too Late," Circle Arts Theatre, 8:30 p.m. May 5; discount tickets $5 and $4 (50-cent saving). Deadline April 28.

* * *

Tickets are still on sale at all General Dynamics employe services outlets to the Industrial Recreation Council fashion show April 26, Palm Room, Grant Hotel.

Men and women will model spring fashions after a 6:30 p.m. dinner. Tickets are $4.50 for dinner and the show, or $1.50 for show and dessert only.

* * *

Starlight Civic Light Opera advance tickets for "Finian's Rainbow," July 8, "Oliver," Aug. 12, and "Gypsy," Sept. 2. All performances 8:30 p.m., Civic Theatre. Discount $1 on all seats; tickets at Kearny Mesa and Lindbergh Field employe services offices only.

On Sale:

Multiple-purpose pocket knives, made of fine quality German stainless steel with the Convair division monogram, are on sale at $5, including tax, at all Convair employe services outlets.

Iris Oster Flight A Winner at Tecolote

Iris Oster won Flight A trophy and Kathryn Hagley garnered the Flight B trophy in General Dynamics Women's Golf Club competition April 8.

Twenty-seven played the Tecolote Canyon course at the monthly match.

Gift certificates went to runners-up, Flight A—Mary Ransom, Mabel Dunn, and Jeannine Letzring; Flight B — Kathryn Mix, Betty Liddell, Gerry Swanson.

Golf balls, courtesy of the course, were won by Jeannine Letzring and Karen Dudley.

Next tournament will be May 13 over the 9-hole San Carlos course.

Industrial Council Slates Match Play

San Diego Industrial Recreation Council's 25th annual match play golf tournament is scheduled May 6-7 and 13-14 at Torrey Pines. Entry fee is $3.50, deadline for entries is April 26 and all competitors must have established plant handicaps.

Entry blanks are available at employe services offices at Kearny Mesa and Lindbergh Field. Additional information may be obtained by calling ext. 2657 KM.

Flyers To Meet At Riverside

Bonair Flyers invite GD pilots and their friends to join them for brunch at the Riverside Airport this coming Sunday, April 23.

Everyone will make his own way to the fly-in and meet at the airport restaurant between 10 and 11 a.m. No reservations are necessary.

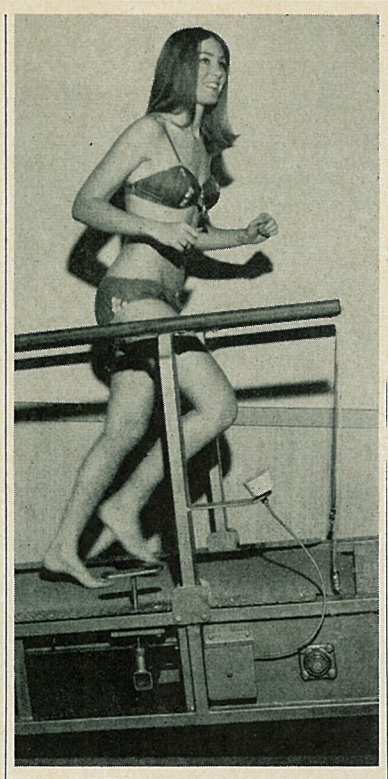
Regular club meeting will be Tuesday, May 2, 7:30 p.m., at the CRA Clubhouse.

May 3 Is Deadline For Ticket Drawing

Ninety-six tickets for San Diego Padres home baseball games in May will be awarded in a CRA drawing May 4.

Entry slips, limited to one per employe, must be deposited by May 3 and include name, division, plant, department number, shift, and plant phone extension.

Deposit boxes are at Convair, Stromberg-Carlson, and Electronics-SD employe services outlets, the Bldg. 51 engineering mailroom at Lindbergh Field, H. C. Medearis' office at Air Force Plant 19, and the CRA Clubhouse.



HEALTH AID — Mrs. Jeanne Curry tries out a new treadmill at CRA Health Club, which is offering six-month trial memberships for employes.

Adventurers Slate Anza-Borrego Trip

CRA Adventurers will travel to Clark Dry Lake in the Anza-Borrego Desert State Park to view the Borrego badlands on the weekend of April 29-30.

Travelers will meet at Christmas Tree Circle in Borrego Springs at 9 a.m. on Saturday (April 29) and leave at 9:30 for the lake site. There are no sanitary facilities or water, said Carl Tuttle, trip leader. Roy Madden is assistant leader.

Tonight (April 19) members and guests will meet at the CRA Clubhouse auditorium at 7:30 p.m. to see a display of backpacking and camping equipment and a slide showing.

Toastmasters Club Seeking Speakers

Applications are now being accepted in two Convair Toastmaster Clubs from both novices and experienced speakers, CRA Commissioner Ezra Johnson said.

All interested men are invited to attend a typical Toastmasters meeting free any Wednesday at 4:15 p.m., (meeting time of Convair Toastmasters 3745), or any Thursday, 5:15 p.m. (Dynamics Toastmasters 457) in CRA Clubhouse.

Information may be had by calling Johnson at ext. 3388 KM, or CRA Headquarters, ext. 1111 KM.

Knutson Wins Police Pistol Competition

J. S. Knutson of Convair's Dept. 780-0 edged Warren Ranscht of Dept. 967-3 (294-14x to 294-10x) to take top master class position in CRA Pistol Club's Camp Perry police course firing at the San Diego police pistol range. Roland E. Schneider, Dept. 401-1, was third with 286 out of the possible 300 points.

Top three men in expert class were Jim Halfacre, Dept. 041-0, 280; Bill Dittmann, Dept. 951-1, 279; and Bill Worthington, Dept. 519-0, 279.

ELECTRONICS MAN HEADS FISH CLUB

Bob Ern of Electronics-SD Dept. 711 was elected president of the CRA Tropical Fish Club at the April 10 meeting. Other officers are Gerald Davis, Convair Dept. 101-1, vice president, and Tony Hwozdek, Convair Dept. 951-7, secretary-treasurer.

RIDERS TURN OUT FOR WORK PARTY

Over 40 Riding Club members and their families turned out for a Branding Iron breakfast and work party at the CRA horse ring Sunday, April 2. After a meal of eggs, ham, potatoes, served up by Chuck Payne, the men painted and repaired the announcer's booth.

Sports & Recreation

'Package Tickets' Worth $100 Offered at $5 For 1967-68

"Be Our Guest" booklets, containing 66 full-admission tickets for 1967-68 recreational, cultural and sports events in the San Diego area with a value of more than $100, are on sale for General Dynamics families at $5 each through May 31 at all employe services outlets.

Tickets are included for baseball, football, basketball, track, wrestling, golf and miniature golf, auto, motorcycle and slot-car racing, ice and roller skating, go-carting, karate, swimming, billiards, archery and bowling.

Also symphony, opera, ballet, little theater, bay and harbor excursions, dancing, amusement park, puppet show and kiddieland attractions.

Several of the covered "individual participation" activities are available at several locations in the metropolitan area.

Tickets will be honored at four Padre home games, San Diego State College football tickets at two home games, San Diego Symphony tickets at any performance (by advance reservation), and Starlight Civic Light Opera tickets at Thursday evening performances.

The "Be Our Guest" booklets are distributed by Major Sports Associates, Inc., as a promotion for 46 sponsoring organizations. Information sheets giving details are available at all employe services outlets.

Convairiders Plan Trip to Lakeside

Convairiders with 10-speed bikes will make a 50-mile scenic ride to Lakeside this Saturday (April 22). The group will leave the flagpole at Kearny Mesa at 8 a.m. for the four-hour ride which will take them along Friars Road and Mission Gorge Road.

Eighteen members of the club met in Spring Valley and pedaled to Frontierland in Harbison Canyon for a picnic on April 8.

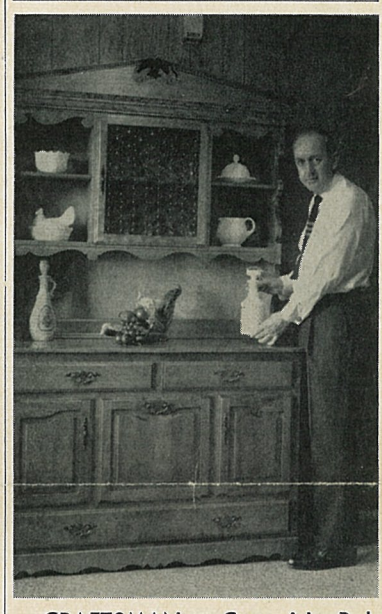
10-Week Beginner Net Class Planned

CRA Tennis Club will offer a 10-week class for beginners from 5 to 6 p.m. Tuesdays starting May 9 at the Kearny Mesa courts.

Interested employes and family members may obtain additional information and register by calling Bob Herold, ext. 2035 KM, or Jim Jobe, ext. 3468 KM.

SALVAGE SALES SLATED APRIL 29

Next sales day at the Convair salvage yard is Saturday, April 29, from 8 a.m. to noon. The yard at Lindbergh Field plant, adjacent to Gate 5, is open to all General Dynamics people upon presentation of ID cards. No children are permitted in the yard during sales hours.



CRAFTSMAN — Convair's Bob Bailey and large Colonial birch hutch, one of many pieces of furniture he has designed and built to furnish his La Mesa home, which he also built.

Self Taught

Home-Builder Turns His Hand To Furniture and Clocks

A Convair man, who got into the carpentering business 16 years ago when he decided to build his own home, hasn't been able to stop.

Bob Bailey, quality assurance supervisor, still spends all his spare time building — now quality furniture and custom-made clocks to order.

It was back in 1950 when he struck out on his own to build the home — a split-level, four-bedroom, two bath dwelling on Alpine Ave. in La Mesa. He completed the entire structure in just three months, even doing all the electrical installation and plumbing himself. It continues to be the family home.

Only experience he had ever had before was building a sailboat as a teenager; and only help was that offered by friends on weekends!

"Next came the furniture," Bailey recalled. "We couldn't find any of the style and quality we liked, so I built it."

All of Bailey's custom-built pieces are in Colonial style of alder, birch, or maple, and, he says, "I may be in the reliability business, but my wife is my chief inspector. She gives the final blessing on everything I make."

Most ambitious items are a 53-in. drop leaf solid maple table which extends to 73 inches, and a large upright birch hutch with scalloped edges and a decorative section of amber bottle glass.

Bailey said that the hutch alone should be worth several hundred dollars if it could be duplicated. His materials cost $100.

Other unusual touches, all designed and made by Bailey, are an old-fashioned sugar bin to hold stereo records, an ox yoke hanging fixture, a pot-bellied stove transformed into a floor lamp.

"When everything in the living room blended except the television set, I built a wooden envelope to slide over the cabinet," Bailey said.

About four years ago when he ran out of home projects, Bailey was encouraged by his wife, Kay, to try building clocks. Since then he has built six grandfather clocks and seven chiming wall clocks, now in the homes of friends and relatives from Connecticut to Oregon.

Last year on their vacation, the Baileys sent their luggage by Greyhound bus so that they would have room in their car for a grandfather clock going to a family in Northern California.

It takes Bailey just about three months to build a clock cabinet from his own designs which he sketches on wrapping paper or anything handy. He imports the clock movements from a firm in the Black Forest of Germany. Recently the German manufacturer got two orders mixed and Bailey's was finally located in the hands of the mayor of Marietta, Ohio.

SAVE to Hear Dynamics Men

At least three General Dynamics men will participate in the national convention of the Society of American Value Engineers in Chicago next week.

A. E. Gilligan, Fort Worth division configuration status accounting administrator, will present a paper on "The Neglected Value Engineering Application—Data Processing."

E. D. Heller, Convair manager of cost reduction and value control, will speak on "Expanding the Value Engineering Effort" and Warren Ridge of Heller's staff will give a presentation on "Value Analysis of Management Practices."

During the convention C. W. Doyle of Fort Worth division, retiring national president, will relinquish reins to his successor.

Danish Line to Fly 990 Jet Transports

Hakon Togeby, chief engineer for Internord Aviation, Danish charter airline based at Copenhagen, spent a day last week at Convair's Lindbergh Field plant conferring with people his company will be dealing with when Internord's newly-purchased 990s go into service.

The airline, which charters planes to travel agencies and other operators, has purchased three of American Airlines 990 jet transports. First plane will be delivered in early June.

Togeby met with personnel in Convair service engineering and service parts.

Three Generations On Rolls of Convair

Gene Catton Sr. may have retired from Convair, but the name lingers on! His son, Gene Catton Jr., is a 25-year man in Dept. 491-0, and his grandson, Ron, is working second shift in Dept. 005.

All three generations of Cattons have been based at Lindbergh Field plant.

Catton Sr. retired the end of March after more than 25 years with the Company. He first joined Convair in 1940 in major and primary assembly on LB-20s and PB2Ys.

Workshop Session Scheduled April 22

Reservations may still be made through Friday for the "Guidelines for Personal Development" workshop session to be held all day Saturday, April 22, in Cal-Western's auditorium.

The National Management Association Regional Management Development Conference is open to the public, regardless of club membership.

Registration at $6 for luncheon and the conference may be made through Helen Cook, Management Club office, ext. 3146, Kearny Mesa.

250 Golfers Sign For Golf Leagues

Approximately 250 Pomona division golfers signed up April 10 to play in 13 PRA Twilight Golf Leagues.

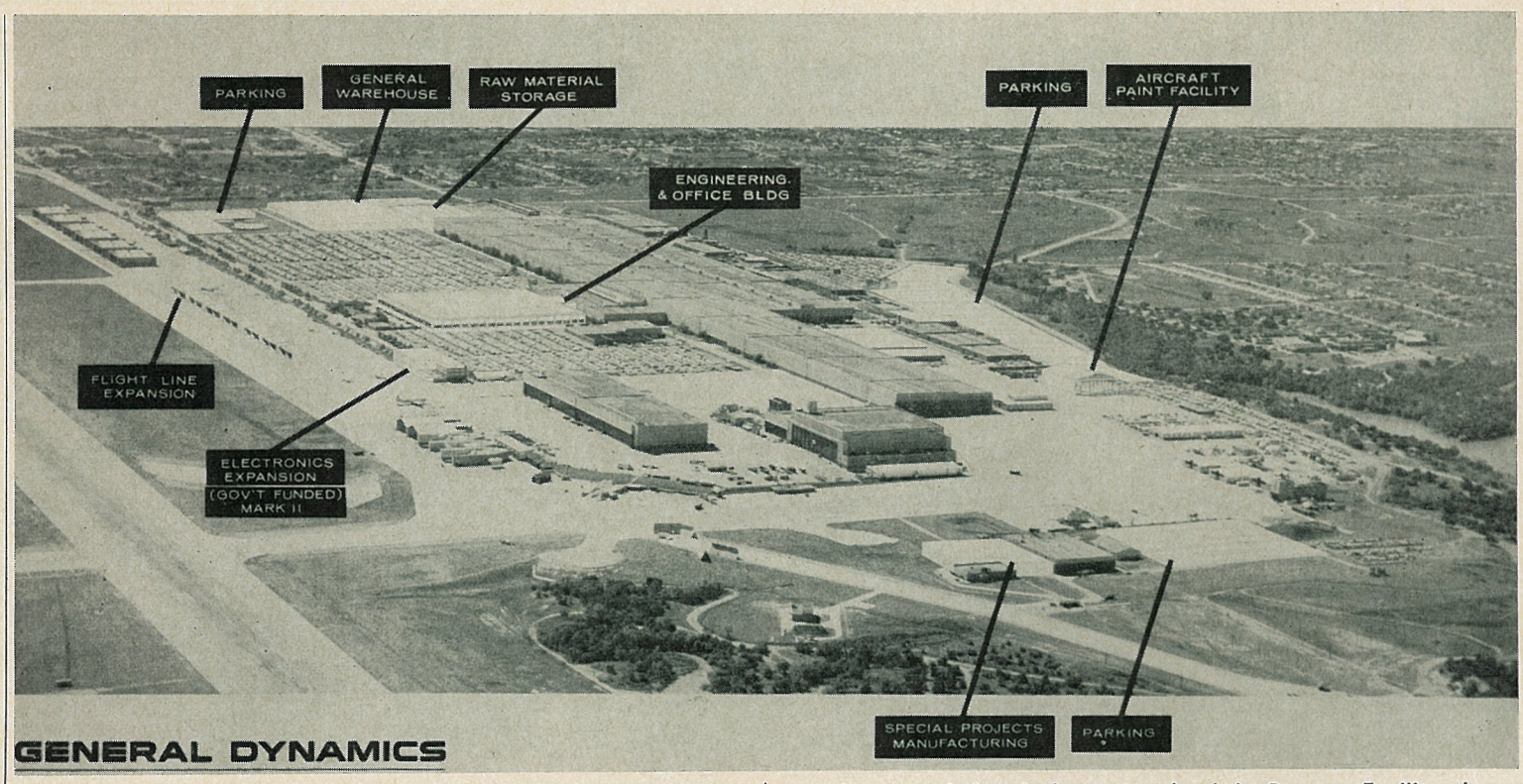
Five women's leagues and eight men's league will start play the first week in May.

Beginner instruction will be offered for women at Whispering Lakes Par-3 starting Monday, May 1, 5:30 p.m. Women may contact Jackie Daoust.

Barbershop Singers To Appear in Show

Four General Dynamics men will be heard with the San Diego Sun Harbor chorus when it presents its annual "Parade of Barbershop Harmony" on May 20 in the Civic Theatre.

W. L. Larson, Dept. 400-1; Gene Hartzler, Dept. 195-0, and R. A. Smalley, Dept. 506-1, of Convair, and Roy Gilmore of Stromberg-Carlson are members of the barbershop vocal group.



BUILDING BOOM—Above projects are slated for construction during Fort Worth division's 1967 expansion program. Already nearing completion is large, modernistic Process Facility shown at south end of main plant building.

High School Group Given Plant Tour

Seventeen high school students from California, Arizona and Utah toured Convair's Kearny Mesa plant April 6 while they were in San Diego for the Southwest Regional Youth Science Congress sponsored by NASA and the National Science Teachers Association.

J. P. McCann, M.D., chief of aerospace medicine for Convair, J. T. Neu, Ph.D., chief of space physics for Convair, and Edward Creutz, Ph.D., vice president-research and development for General Atomic, served on a panel that offered comments on oral scientific reports given by the students.

GD Children to Play In Youth Symphony

Children of four Convair division employes will be performing with the San Diego Symphony in "A Musical Night to Remember" concert at 8 p.m., May 7, at Civic Theatre.

They are Pam Curriden, daughter of Charles D. Curriden of Dept. 102-1; Jeanne Keefer, daughter of Eugene C. Keefer of Dept. 516-0; Sue Pallulat, daughter of Henry Pallulat of Dept. 562-2; and Scott Chambers, son of Frank Chambers of Dept. 110-1.

Old Japanese Coins Subject For Talk

Stu Edgerton, president of the San Diego Numismatic Association, will speak on "Ancient Japanese Coins," at tonight's (April 19) meeting of Convair Coineers.

The regular meeting will be at 7:30 p.m. in the Convair cafeteria, Lindbergh Field plant.

Drawing prizes are a 1910S and a 1912S $5 gold piece, 1950D BU nickel, 1943 BU 50-cent, 1945 BU 50-cent, five 1880 BU silver dollars, and five 1885 BU silver dollars.

Retiree Totes Total 26-Years Earnings

Frank Williams did a little figuring when he retired from Convair high speed wind tunnel March 31 and came up with the grand total of $154,151.46 — wages earned during the 26 years he had worked for the division.

Williams, who had kept all of his paycheck stubs, said his first check at Convair was for $24 for a 40-hour week when he joined experimental in 1941. Wage scale then was 60 cents an hour!

Other facts: He had paid a total of $2,502.26 in social security taxes and $19,238.12 in federal withholding taxes.

S-C to Manufacture Crossbar Switching

Stromberg-Carlson will manufacture, install and service #5 crossbar telephone switching systems under an agreement with Northern Electric Co., Ltd., Montreal.

Under the agreement, Northern Electric will supply technical information and some supplies to S-C.

Crossbar switching systems are electromechanical and allow telephone exchanges to provide great flexibility in services.

The crossbar systems will supplement switching systems presently being manufactured and marketed by Stromberg-Carlson.

F-111 CHALLENGES TOPIC FOR TALK

A. C. Murphy, Fort Worth division F-111 flutter and dynamics, spoke to the student chapter of American Institute of Aeronautics and Astronautics recently at Texas A&M. His topic was "Aeroelastic Challenges on the F-111."

Respiration, Pulse Monitored Without Body-Attached Sensors

Two new types of biomedical monitoring systems, developed by Convair division's life sciences section, were described last week at the Aerospace Medical Association's 38th annual scientific meeting in Washington, D.C.

Life sciences personnel also presented papers on three other subjects.

William A. Shafer M.D. described a new method of measuring the pulse and breathing rate of an astronaut or hospital patient without sensors attached to the body.

Called a "field effect monitor," it has been under development and testing for 2½ years and shows "significant promise."

"It has many potential uses in monitoring such as for severely burned patients or patients in intensive care units," Shafer said.

"This is an entirely new method of obtaining cardiovascular and cardio-respiratory information."

J. W. Steadman and V. W. Vorbeck described a unique Convair underwater bio-telemetry system used to measure "astronaut" workload during underwater neutral buoyancy tests that simulate the zero-gravity environment of space.

The system is incorporated in a backpack, developed by the life sciences crew performance group, that contains instruments and radio signalling equipment for transmitting data from the submerged subject to the surface without wires.

Bernard D. Newsom PhD., Richard L. Wolf and Edwin J. Russ presented a paper on development of a lunar simulator for prolonged duration metabolic studies and T. W. O'Laughlin, J. F. Brady and Newsom presented a paper on reach effectiveness studies conducted in Convair's manned revolving space simulator. Newsom also talked on feasibility of future use of "orbital hospitals" for therapeutic purposes at a special meeting for nurses.

Also participating in the meeting in Washington were Robert C. Armstrong M.D., manager of life sciences; John P. McCann M.D., chief of aerospace medicine; Buster Carlson of the life sciences section; and Hal Peyer of Convair news bureau.

Convair's exhibit for last week's Aerospace Medical Association meeting in Washington also will be on display Saturday and Sunday (April 22-23) at the San Diego Health Fair in the Community Concourse exhibit hall.

SLV-3 Performs Without Flaw

Convair division recorded its 26th consecutive successful Atlas space launch April 5 when SLV-3 No. 5102 lifted an Agena second-stage vehicle and NASA's Applications Technology Satellite-A into space from Complex 12 at the Eastern Test Range.

Jim Von der Wische, Convair program manager for NASA Atlas SLV-3 programs, said the Atlas performed nominally in all respects and released the Agena and ATS-A at about 90 nautical miles altitude and 400 miles downrange.

The ATS-A spacecraft, designed to test the gravity gradient principle of stabilization, unreeled its unique balancing booms in space to the height of a 25-story building. Technical difficulties encountered after the Atlas separation, however, prohibited the craft from going into desired orbit.

Life Sciences Activity Described For Group of Visiting Physicians

Thirty-one Air Force, Army, NASA and foreign country physicians who are enrolled in aerospace medicine training programs at Brooks AFB, Texas, visited Convair last month for a plant tour and briefings on the division's life sciences section activities.

John McCann, M.D., chief of the section's aerospace medicine group, was host.

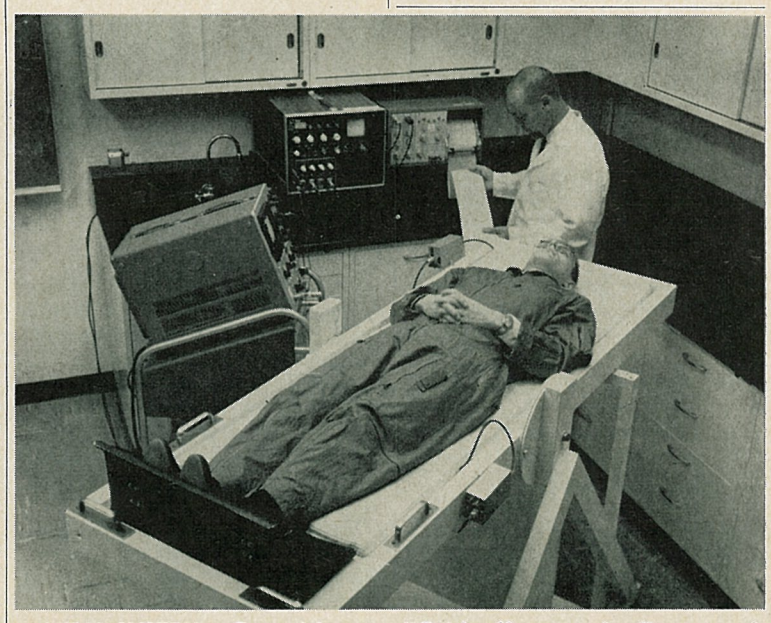
Accompanying the visitors were Lt. Col. R. D. Hansen and Major Eugene F. Hames.

The seven foreign physicians were from Brazil, Germany, Republic of China, Japan, and Thailand.

The group was welcomed to Convair by W. E. L. Boyce, director of research and information sciences, and Lt. Col. G. D. Fairbanks, Defense Contract Administration Services deputy plant representative, and were briefed on division products by Ray T. Blair Jr., assistant to the general manager.

Robert C. Armstrong, M.D., section chief, and others conducted the life sciences briefings, which included information on aerospace medicine, crew performance and life support engineering work.

During the tour, the visitors were briefed on electronics manufacturing by J. M. Farrar, the combined systems test stand by G. G. Christ, the integrated manned systems simulator by S. D. Battle and information storage and retrieval facilities by W. F. MacDonald. Buster Carlson of life sciences was tour conductor.



NEW SYSTEM—Convair's new "field effect monitor" system is used for monitoring pulse and breathing rate of John Steadman as William A. Shafer, M.D., checks recording. Antenna under mattress sends signals to recorder and oscilloscope.

Campaign to Increase Payroll Bond Buying Will Begin May 16

Convair division will conduct its 1967 U.S. Savings Bonds campaign this month, with solicitation extending from May 16 through May 26.

Major emphasis will be placed upon participation. At the present time 62 per cent of all Convair employes are buying bonds through payroll deduction.

"You can be a regular bond buyer for as little as 50 cents a week," is the theme.

Convair's continuing efforts to maintain a high rate of bond buying through payroll deduction is in response to many appeals from President Johnson, the Treasury Department, Department of Defense and NASA, particularly to defense and space contractors. Widespread citizen bond holdings not only contribute to a strong economy but are a profitable—and safe—investment for the individual.

All Convair employes not presently purchasing by deduction will be approached and given an opportunity to join. A signature on a simple authorization form is all that is needed.

"Although Convair ranks high among General Dynamics divisions in payroll bond buying, we are not the leader. That distinction is held by Electro Dynamic division that reached 90 per cent last year," M. V. Wisdom, director of industrial relations, said.

"We are hopeful that by the close of this month's campaign Convair division will be making a strong challenge for No. 1 place in the Corporation."

SAN DIEGO EDITION

GENERAL DYNAMICS

NEWS

Vol. 20, No. 9 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, May 3, 1967

BIGGER BOOSTER—Grant Hansen, Convair vice president-launch vehicle programs, autographs sign indicating increased length of first Atlas SLV-3C. Waiting to add signatures are Col. James Ourand, Defense Contract Administration Services plant representative; Col. Leo W. Sullivan, SLV-3 program director for Air Force Space Systems Division; and Ronald Rovenger, NASA resident representative.

First SLV-3C Slated For Surveyor 5

Convair's first Atlas SLV-3C was "rolled out" and presented to Air Force and NASA representatives in ceremonies April 14 at the Kearny Mesa plant.

The vehicle, 51 inches longer than its SLV-3 Centaur-booster predecessors, will be used in the Atlas-Centaur 13 flight to send Surveyor 5 on its way to the moon later this year.

Officials present for the "roll out" included Col. Leo W. Sullivan, SLV-3 program director for the Air Force Space Systems Division (SSD); Lt. Col. Donald L. Nangle, who earlier had conducted the SLV-3C first article configuration inspection for SSD; Walter F. Kindt, NASA representative at SSD; Grant L. Hansen, Convair vice president-launch vehicle programs; Col. James R. Ourand, Defense Contract Administration Services (DCAS) plant representative; and Ronald Rovenger, NASA resident representative.

"We are happy to see this improved Atlas delivered on schedule," Col. Sullivan said. "We are looking forward to the increased payloads the Atlas SLV-3C and Atlas SLV-3A vehicles will enable us to launch."

Rovenger said the first SLV-3C (No. 5901) will undergo combined systems tests with Centaur and Surveyor at Kearny Mesa before it is shipped to the Eastern Test Range for the AC-13 flight.

The new SLV-3C vehicles will carry an additional 21,000 pounds of usable propellant and with Centaur will be capable of sending a 2,900-pound payload to escape velocity or 2,200 pounds to Venus or Mars.

Richard Lowe, DCAS quality control representative, signed the official DD-250 acceptance form for the first SLV-3C April 13. The second is in final assembly at Kearny Mesa.

Three of the first nine SLV-3C Centaur-boosters being produced will be used by NASA for Surveyor missions, two for Applications Technology Satellites, two for Orbiting Astronomical Observatories and two for Mariner-Mars '69.

First of the new Atlas SLV-3A vehicles, with a 117-inch longer tank for carrying an added 48,000 pounds of usable propellants, now is in final assembly.

First article configuration inspection for the first SLV-3A (No. 5602) is scheduled July 27-28 with delivery Oct. 5.

SLV-3As will be used for both NASA and Air Force missions. With an Agena second stage, they will be capable of sending 1,450 pounds to escape velocity or a 985-pound payload to Mars.

Club's Spring Dance To Be Friday, May 12; Tickets Dollar Each

Annual Spring Dance of Convair Management Club members and guests will be staged at the Hilton Inn next Friday, May 12.

Sponsored by industrial relations, the evening will be a purely social affair. Buster Carlson's 10-piece orchestra and vocalist will provide music for dancing from 9 p.m. to 1 a.m.

Tables accommodating eight to 12 persons will be reserved for parties upon request. Snacks will be provided at each table.

Orchids for the ladies are being furnished by the Convair Garden Club.

(Continued on Page 2)

Rambeau and Bickers Seek Club Presidency

A. H. Rambeau and M. S. Bickers will battle it out for top office of the Convair Management Club in elections coming this month.

Rambeau, assistant to the vice president of operations, and Bickers, deputy program manager for the Convair 600/640, were presented as presidential nominees at the April 21 meeting.

Other candidates presented by W. L. Van Horn, nominating committee chairman, were:

Vice president—J. M. Farrar (780-0), R. E. Monce (059-0).

Second vice president—T. S. Wied (110-2), A. R. Mosco (195-3).

Recording secretary — C. B. Simmons (954-3), H. B. Day (123-0).

Financial secretary—B. J. Neal (194-0), J. H. Walk (954-1). C. E. Reid (595-0) nominated from the floor.

Treasurer — J. L. Mumford (953-0), G. E. Nuss (420-0).

Three-Year Board (two to be elected) — Howard Tulchinsky (526-6), J. F. Ames (045-0), Lyle Wood (840-0), J. E. Cook (957-0). W. H. Hill (961-0) nominated from the floor.

Two-Year Board (two to be elected)—R. V. Woodle (951-7), S. W. Swenson (511-1), A. H.

(Continued on Page 2)

A-C 12 Flight 'Phenomenal' For Accuracy

Convair's highly successful Atlas-Centaur 12 flight which early April 17 (Eastern time) sent Surveyor 3 on its 65-hour transit to the moon marked Centaur's first two-burn operational mission and the 11th Atlas-Centaur launch.

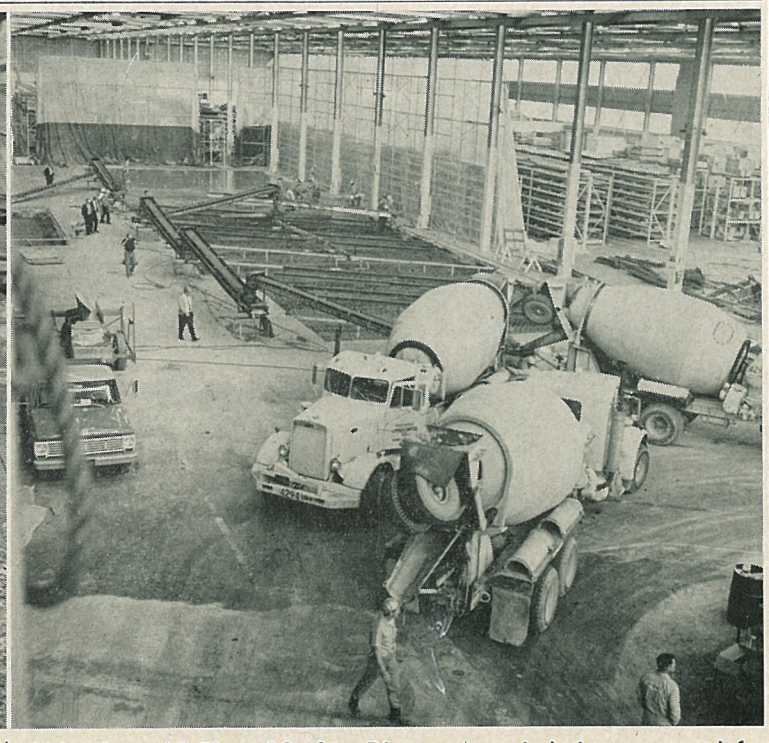
After the Atlas booster and sustainer engines powered the lift into space, a 5½-minute "first burn" of Centaur's 15,000-pound-thrust liquid hydrogen engines sent the Centaur-Surveyor into a 90-mile-high "parking orbit."

Centaur's later "second burn" of 110.1 seconds started the Surveyor on its quarter-million-mile flight with what W. J. Hammond, Convair site support group engineer at Kearny Mesa, called "phenomenal accuracy."

After Surveyor separation, Centaur's flight path was altered through a retromaneuver and residual propellants "blowdown"

(Continued on Page 2)

BIG POUR—Continuous line of trucks kept concrete going into conveyors at rapid rate of 135 cu. yds. per hour during pouring of 850 cu. yds. to cover 20,000 square feet in northwest bay of Bldg. 1 at AF Plant 19, San Diego. Area is being prepared for installation of Convair routing machines. Other parts of same building are being readied for milling machnes.



Atlas-Centaur Flight Praised

Convair division launch vehicle programs personnel received the following telegram from Edmund R. Jonash, manager of the Centaur project office at NASA Lewis Research Center, after the Atlas-Centaur 12 launch of Surveyor 3.

"Congratulations on another successful flight of Atlas-Centaur. While AC-9 proved the two-burn concept, I'm sure we all needed this success to feel really operational.

"Again, special congratulations to your staff at ETR for their excellent response in resolving the several problems that developed during the final pre-launch days and for their outstanding performance during the countdown, particularly with respect to maintaining launch readiness during the extended spacecraft hold."

A-C 12 Surveyor Launch 'Phenomenal' For Accuracy

(Continued from Page 1)

to send it past the moon and into a highly eliptical orbit. The Atlas tank, meanwhile, fell back through the atmosphere over the South Atlantic.

Robert Benzwi of the Centaur program office said only a 4.19 meter per second correction was needed April 17 to direct the Surveyor to the precise target for its soft landing April 19 southwest of the moon's mid-point. The spacecraft had a 42-meter correction capability.

Surveyor 3's unique lunar soil sampler device and its television camera gave scientists their first good close-up analysis of lunar soil composition.

Among Convair officials at the Cape for the AC-12 launch were Grant Hansen, vice president-launch vehicle programs; Andrew Kalitinsky, assistant program director-launch vehicle engineering; Deane Davis, Centaur program manager, and E. E. Barringer, AC-12 project engineer. Daniel Sarokon was launch conductor.

Jack L. Bowers, Convair general manager, Hansen, Kalitinsky, and Benzwi were at Jet Propulsion Laboratory in Pasadena April 19 for the Surveyor landing and first photo return.

Atlas-Centaur flights last year placed two previous Surveyor spacecraft on near-perfect lunar trajectories. The first Surveyor made a soft landing June 2, 1966, and subsequently returned more than 10,000 close-up photos in a flawless performance. The second Surveyor was launched successfully in September but failed to accomplish its soft-landing mission.

Convair vehicles for the Atlas-Centaur 11 flight the third quarter this year are being shipped to the Cape following successful combined systems tests with Surveyor 4 at Kearny Mesa.

★ ★ ★

PRIME Continues String of Perfect Launches of Atlas

Convair-built Atlas space launch vehicles have achieved 28 successful shots in a row, tying the all-time Atlas record set in 1963.

The 28th consecutive successful launch was April 19 when SLV-3 7003 sent aloft an Air Force PRIME SV-5D vehicle from Vandenberg Air Force Base.

The wingless maneuverable reentry vehicle was caught in the air by an Air Force recovery team, making the mission an "unqualified success," according to AF spokesmen.

The flight was the third in a series of four to test maneuverability of the unmanned vehicles, called forerunners of space craft which may bring astronauts back to earth from space.

Next Atlas launch is scheduled soon when SLV-3 5804 is due to launch a Lunar Orbiter from Complex 13 at Cape Kennedy.

Log Book Entries

Awards

Employe Suggestion awards approved for the week ending April 14.

Dept. 005-0, B. L. Silvas; 015-0, G. F. Nebelung; 027-0, A. I. Cox, A. J. LeBeaur, F. J. Serio, G. R. Simpson; 059-4, T. C. DeBolt; 101-4, L. F. Anderson; 130-9, L. A. McGraw; 131-4, B. E. Lykins; 140-1, F. J. Dietz; 141-2, S. Cohen, C. L. DeLaIsla; 142-1, F. J. Kossyta, D. R. Mabery; 144-1, J. J. Gallant, F. Haywood, W. G. Lux; 149-2, W. E. Tandy; 193-1, H. L. Maddox; 250-1, L. J. Wood; 401-6, F. Lewon; 454-0, R. C. Christopher, R. B. Turner, M. B. Watling; 572-1, D. T. Farrelly; 574-1, A. Aron, W. H. Pfender; 759-0, R. E. Orozco; 761-0, P. Grasmick, C. W. Neal (three awards); 764-0, R. E. Florez, R. E. Lopez (two awards); 780-1; P. C. Pond; 831-0, R. Bonnell, G. Lewis; 832-3, M. L. Larsen; 833-2, M. M. Wood; 834-1, A. M. Pilot; 840-2, V. C. Aresin; 957-0, J. A. Madden; 957-2, K. McCafferty; 964-2, K. E. O'Neil; 974-4, I. V. Steinberger; 979-1, J. H. Siems; 979-3, A. C. Davis.

Employe Suggestion awards approved for the week ending April 21.

Dept. 015-0, G. M. Calahan; 016-0, L. W. Barbour, R. D. Hampton; 019-0, P. C. Wittmann; 031-0, J. M. Guess, L. Hudson; 130-0, H. Osborn; 130-1, R. M. Linville; 141-3, J. R. Peugh; 143-1, J. S. Adams, J. J. Murphy; 144-2, H. M. Gallant, P. Plus; 149-0, B. J. Moore; 191-0, S. W. Ronaldson; 452-0, G. C. Swaim; 519-0, J. L. Martin; 531-2, E. B. Woodward; 543-2, J. L. Hanson; 574-1, C. L. Hagen, C. Milstein; 717-0, D. R. Gauss, J. W. Nesseim; 733-0, R. E. Reeves; 756-0, H. P. Higdon; 159-0, E. Gabbard; 761-0, C. W. Neal, L. Spurgeon; 762-0, R. L. Robinson; 764-1, E. H. Johnson (two awards); 780-1, B. C. Anthony (three awards); 831-0, G. Lewis; 835-5, C. D. Allenson Jr.; 850-0, J. H. Duncan; 958-7, H. C. Brunner; 979-2, S. K. Baker Jr.; 979-1, J. J. P. Paille; 979-3, J. A. Smith; 985-1, J. E. Jones.

VANDENBERG AFB

Dept. 985-1, A. L. Scheibel.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Monday, May 15. Lindbergh Field, ext. 491, Bldg. 14 auditorium, 8 a.m., Tuesday, May 9.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931, Kearny Mesa.

Rider-Driver

ELECTRONICS-SD

RIDE WANTED—7 a.m. to 3:30 p.m. shift. From 30th and Redwood to Lindbergh Field plant. Eugene M. Covert, ext. 1685 LF or home phone 281-5481.

CONVAIR

RIDE WANTED—from 54th and El Cajon, 7:30 a.m. to 4:15 p.m. shift to Lindbergh Field. Phone Julie Rosenthal, home phone, 583-9083.

Invention Disclosures

CONVAIR

BANK—F. A., Dept. 507-0. "H" Feedback for Differential Operational Amplifier.

BRADY—M. C., Dept. 578-4. Hand Hydraulic Pump.

ROBERTS—L. W. Sr., Dept. 511-6. Controlled Contour Drilling Device.

Personals

CONVAIR

Your kindness and sympathy at the death of George J. Goretsos (retired) are more deeply appreciated than any word of thanks can express.

Grace Goretsos and family.

* * *

I wish to express my deepest gratitude to all my Convair friends for the flowers, cards, and their acts of kindness during the illness and upon the death of my wife.

Floyd E. Reed
Dept. 015

Deaths

CONVAIR

BETHUNE—John A., Dept. 760-1. Died April 24. Survivors include wife, Lessie R.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N.Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Free Subscriptions Offered by Some Technical Journals

A number of high caliber technical and trade journals have a controlled circulation policy which includes free subscription to qualified engineers and scientists, Keith Blair, Convair chief librarian, advises.

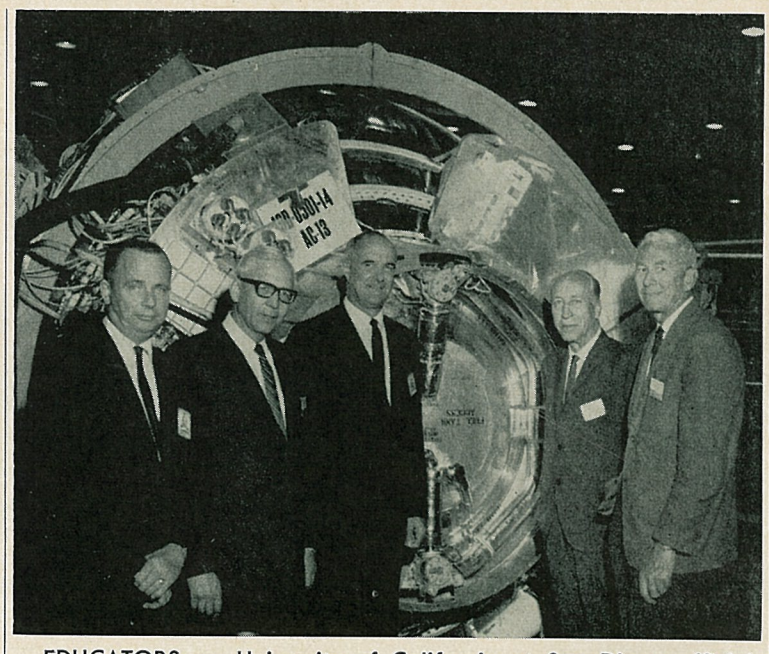
"The privilege is not widely known," Blair said. "However, in most instances all that is required is a letter on Company letterhead, including the individual's title. USE HOME ADDRESS, however, because division policy, at least at Convair, prohibits receiving such mail at plants."

Among publications listed by Blair are Production Engineering, American Machinist, Control Engineering, Datamation, Design News. Magazines extending such a privilege carry this under "subscription information" on the copyright page.

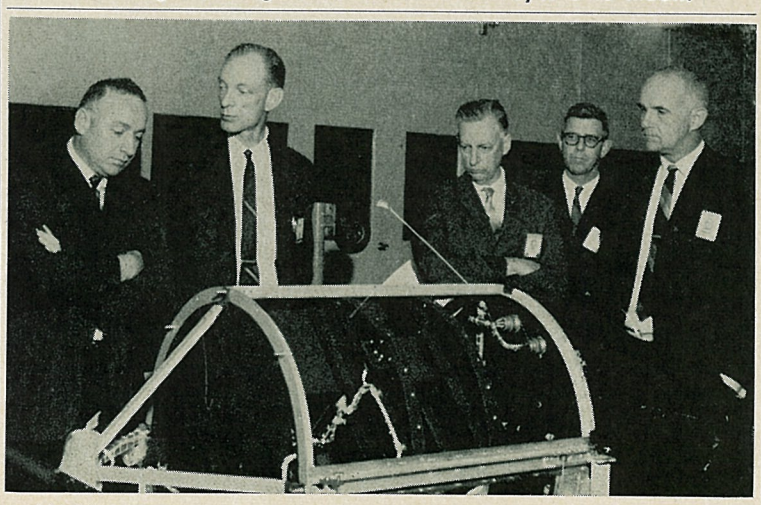
Engineer Honored By Tooling Society

Doug Thompson, Convair manufacturing development engineer, was honored for his contributions to the San Diego Chapter of the American Society of Tool and Manufacturing Engineers by the President's Award at the March installation of officers.

Convair's Jim Duffy, outgoing chapter chairman, presented the award.



EDUCATORS — University of California at San Diego officials were at Convair's Kearny Mesa plant recently for division products orientation. They toured launch vehicles final assembly area with Jack Bowers, center, division general manager, and E. R. Peterson, left, vice president-research and engineering. Dr. John Galbraith, right, is UCSD chancellor and Robert Biron, second from left, and Dr. Carl Eckart, second from right, are vice chancellors. Centaur for AC-13 flight (background) will send Surveyor 5 to moon.



NASA VISIT—Bruce T. Lundin (second from left), associate director for development at NASA's Lewis Research Center, sees OV-1 satellite at Convair Kearny Mesa plant during recent visit. Others, from left, are Ronald Rovenger, NASA resident representative; J. C. Nettles, Centaur deputy project manager at Lewis Research Center; Convair's Frank Dore, director of advanced programs; and Division Manager Jack L. Bowers.

Two Staff Appointments Made To Data Products Engineering

Two new appointments to the staff of C. R. Fisher, director of engineering for Stromberg-Carlson's Data Products division, have been announced by Carl V. Shannon, general manager.

Louis A. Smitzer has joined the company as manager of peripheral equipment while Paul H. Gleichauf, PhD, has accepted

Louis Smitzer P. H. Gleichauf

the post of manager of Charactron tube engineering, effective April 17.

Both come to Stromberg-Carlson with well-qualified backgrounds, Fisher said.

Smitzer had been director of engineering of the Business Equipment Group of Bell & Howell Inc., in Chicago. Gleichauf had been with Rauland Corp., subsidiary of Zenith Radio Corp., the last five years as manager of monochrome cathode ray tube research and development and production of special cathode ray tubes.

A native of Czechoslovakia, he had been with Always, a Czechoslovakian manufacturer of radio components before coming to the United States in 1946 and joining Westinghouse Research Laboratories in Pittsburgh, Pa. He moved to General Electric Co., Syracuse, N.Y., in 1952 and for the next ten years was involved in the development of color television, electron gun, and infrared camera tube, and research in electro-luminescent display devices and thermoplastic recording.

Smitzer was with Ditto Inc. of Chicago from 1945 to 1959, holding the title of chief design engineer the last five years. He joined Bell & Howell in 1959 as chief special project engineer and was promoted to manager of engineering of the Micro-Data division in 1962. Following the merger of Bell & Howell and Ditto he was named to the director of engineering post for the Business Equipment Group.

Smitzer will be responsible for development of ancillary equipment to the S-C microfilm printer line. Joe Eichenberger remains responsible for the microfilm printer line as manager of commercial products engineering.

Other engineering staff members are Fred Hamann, manager of research; Richard Thoman, manager of government custom products; P. O. Wilson, manager of engineering services; and Elmo Turnage, staff scientist.

Yoshihara to Give Symposium Paper

Hideo Yoshihara, PhD., manager of Convair's space sciences laboratory, will present a paper at the Seventh International Symposium on Space Technology and Science in Tokyo this month, May 13-20.

The paper, "Numerical Experiments on Space Aerodynamics," was co-authored by Yoshihara with Leonardo D'Attorre and R. J. Magnus, both of the space sciences laboratory.

The Symposium will cover spacecraft — manned and unmanned; space electronics, propellants and propulsion, guidance and control; as well as space science, medicine and biology.

George Achtmeyer Now Data Products Operations Manager

George B. Achtmeyer has been named manager of operations of Stromberg-Carlson Data Products, Carl V. Shannon, general manager, announced. Achtmeyer succeeds Ivan Kemper who will be on special assignments for Data Products.

George Achtmeyer

Achtmeyer's responsibilities will include production control, production engineering, purchasing, manufacturing, quality assurance, plant engineering, industrial relations/operations. He is headquartered at the El Cajon plant.

Before accepting the S-C appointment he held the position of director of manufacturing, Central Headquarters Staff of Sperry Gyroscope Co., Great Neck, N.Y.

He holds a bachelor's degree in electrical engineering from Rensselaer Polytechnic Institute with graduate studies in the same field while on the engineering faculty at R.P.I. He has held positions in engineering design and manufacturing and plant management leading to his current post.

Club Scholarships Increased to $500

Amount of Convair Management Club scholarships going this year to top-standing Convair sons and daughters has been increased to $500. All four scholarship awards will be of equal value.

Additional funds, from net proceeds of the recent Disneyland trip, were alloted by the club's board of directors to increase the scholarships from the original $350 figure.

The four winners will be chosen late this month from eight finalists. Final decision will be made by a board of judges, four of whom will be from outside the division.

Rambeau and Bickers Seek Club Presidency

(Continued from Page 1)

Gross (115-0), G. D. Schmidt (194-0).

One-Year Board Member (three to be elected)—W. F. Chana (591-3), S. D. Battle (593-0), E. F. Kotnik (057-2), A. W. Nelson (585-3), John Tannone (130-9), D. G. Williams (041-0). R. M. Mitchell (964-4) nominated from the floor.

Others serving on the nominating committee were Robert Daly, James Adamson, John Leib, and J. M. Rogers.

Ballots will be in the hands of Management Club members by the first of next week. Deadline for return of ballots is May 19. Newly-elected officers will take office July 1.

Club's Dance To Be May 12

(Continued from Page 1)

Tickets at $1 per person may be purchased through usual Booster outlets and all club members will be individually contacted by industrial relations people.

Milt Wisdom, director of industrial relations, is host. Ken Wulfemeyer is chairman of arrangements assisted by Del Dimmitt, J. J. Jackson, Jack Garrison, Jim Royle, Emory Thurston.

Personal invitations from Wisdom have gone to Corporate Headquarters staff in New York, Pomona division, General Atomic, Western Test Range, and Vandenberg AFB.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

People Mobility

Appointments and Transfers

(Following are recent personnel transfers among General Dynamics divisions. In parentheses are dates when individuals joined the company.)

HOWARD A. SPIEGEL (1961) from Dynatronics to senior engineer, Electronics, San Diego; **JOHN K. UNDERWOOD** (1952) from Convair to 111 logistic support, Fort Worth; **RAY D. GUNN** (1960) from Convair to Pomona as material analyst; **M. KENT TRINDEL** (1966) from Pomona to Corporate Headquarters; **ELMER A. GINGRICH JR.** (1960) from Convair to Fort Worth; **LESTER H. GREEN** (1941) from Convair to Fort Worth (Edwards AFB); **CLAUDE E. FEIGHNER** (1957) from Pomona to Fort Worth as senior aerosystems engineer; **EVERETT P. WATT** (1961) from Convair to contract specialist, Pomona; **DONALD L. BRIGGS** (1963) from Pomona to quality control staff, Canadair Ltd.

DWIGHT T. PASCHAL (1957) from Convair to Stromberg-Carlson Data Products as cost estimator; **FRED C. GOTHAM** (1965) from Electronics, San Diego to electronics engineer, Stromberg-Carlson Data Products; **KOLMAN A. KOLOZSVARY** (1957) from Electronics, San Diego to Stromberg-Carlson Data Products as design engineer; **JARVIS A. NELSON** (1949) from Convair to Fort Worth; **DAVID H. SMITH** (1966) from Convair to 111 flight test, Fort Worth; **WESLEY D. ROGERS** (1961) from Stromberg-Carlson (Charlottesville) to Camden, Ark. plant manager; **CARL D. CLARK** (1964) from Stromberg-Carlson (Ardmore) to Fort Worth; **ARTHUR E. DIVINE** (1966) from Fort Worth to Convair as senior program analyst; **KONRAD M. HALVORSRUD** (1958) from Electric Boat to industrial facilities, Fort Worth; **JACK R. BURTT** (1961) from Los Angeles Corporate Field Office to Corporate Headquarters engineering staff.

GD Men Take Part In Technical Meet

K. R. Jackman of Pomona division's engineering test laboratories was chairman of the instrumentation session April 10 at the 13th Annual Technical Meeting of the Institute of Environmental Sciences in Washington, D. C.

Papers at the session were presented by John D. Ramboz of the U.S. Navy Metrology Engineering Center at Pomona; R. A. Ackley and S. H. Logue of Convair; D. C. Rife and P. W. Abbott of Pomona, and others.

Jackman also presented a slide lecture at the meeting's session on Marine Environment — Oceanography II held April 12.

EB Directs Buying To Small Business

Small business firms received about half of the $176 million spent last year by Electric Boat division for purchased materials and services.

The nuclear submarine shipyard made purchases from 5,119 firms in 1966, of which 82 per cent were classified as small businesses.

ROPEWORK — Convair's Jim Donaghe, Dept. 031 assembler trainee and former Navy man, splices thimble, to hold attachments, into 8-strand dacron rope which will be mooring line for Convair prototype oceanographic buoy Alpha, developed for Office of Naval Research, when it is deployed off San Diego shores this month. Line is nearly one mile long!

SCRAMBLE—Pilots and ground crews of Detachment 1 of 64th Fighter-Interceptor Squadron based in Viet Nam, race for their aircraft, Convair-built F-102s, after being "scrambled" to intercept unidentified intruder. F-102 equipped detachment is responsible for defense of Da Nang sub-sector against possible attack from North Vietnamese aircraft. — (AF Photo.)

TV Graduate Courses Will Be Held In-Plant

Fort Worth division personnel this fall will be able to take graduate-level SMU and TCU courses without leaving the plant.

The courses will be televised into plant classrooms via TAGER (The Association for Graduate Education and Research), sponsors of the Dallas-Fort Worth area's first instructional television network.

General Dynamics is among the first industry participants in TAGER, now comprised of SMU, Graduate Research Center of the Southwest, TCU, University of Dallas, Bishop College, Austin College and Texas Wesleyan College.

SMU's Engineering Television Network is the first element of the system to be implemented.

Initially, graduate-level courses will be directed toward advanced degrees from SMU in electrical engineering, mechanical engineering and industrial engineering. At the same time, TCU will offer graduate courses in mathematics, physics and business administration.

"These courses will start this fall, if facilities are available at the time," said R. H. Huggins, chief of educational services.

Fall classes would likely be held in television classrooms within the educational services section.

Eventually, however, instructional television network courses will be offered in special facilities to be designed into the second-floor area of the new engineering and office building.

"Many details of the program are being worked out and will be announced later," Huggins emphasized.

In addition to General Dynamics, Ling-Temco-Vought, Texas Instruments and Collins Radio in Dallas are among the local industries preparing for classroom television. Other industries are expected to join the program as facilities become available.

"We expect this program will have a wide appeal to engineers now enrolled — or who plan to enroll — in the SMU-TCU Graduate Engineering Program," Huggins said.

"Looking down the road a bit, it's not too difficult to envision additional courses and seminars being offered via television," he added.

BOWERS ELECTED INSTITUTE TRUSTEE

Jack L. Bowers, Convair division general manager, has been elected trustee of Carnegie Institute of Technology, Pittsburgh, Pa. Bowers is one of seven new board members representing business, education, and research throughout the country.

Corporate-Wide News in Brief

Terrier-armed guided missile frigate commissioned, named for late Adm. Frederick J. Horne, WWII vice CNO, uncle of Pomona's division's C. F. Horne.

* * *

Electronics and Electro Dynamic divisions honored for placing first in Corporate Safety Contest in 1966 in "Best Record" and "Most Improved" categories.

* * *

First Atlas SLV-3C, 51 inches longer than SLV-3 Centaur booster predecessors, "rolled out" at Convair.

* * *

April 19th Atlas launch is 28th success in a row.

* * *

Fort Worth division 1,500th student graduates from Value Engineering Seminar.

* * *

ATC unit organized to provide F-111A weapons system training for TAC pilots.

* * *

Fort Worth division is solving — or finding "compensation improvements" — for every "problem area" on the F-111, Frank Davis, division president, reports.

* * *

Phoenix missile launched for first time from U.S. Navy F-111B registers "scored hit" on drone off California coast.

* * *

General Dynamics "engineering managers meeting" will be May 8-9 at Quincy division, followed by a two-day Navy Technological Review. More than a score of Navy research and development representatives are expected, including department heads from the Office of Naval Research.

* * *

Pacific Western Airlines takes delivery at Edmonton on its last Convair 640 in the current contract.

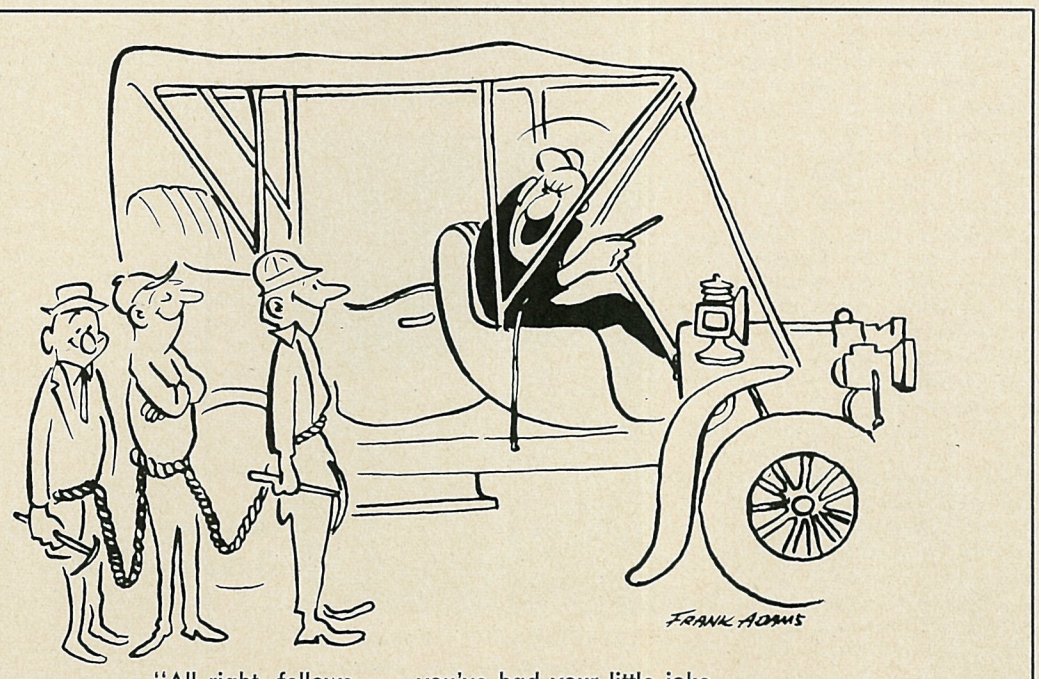
A HOTTENTOT?—Nope, that's not his real hair. He is Patrick Naish, 6, son of Pomona division's H. S. Naish, who borrowed a coonskin cap for this appealing photo.

ATA Maintenance Meeting Scheduled

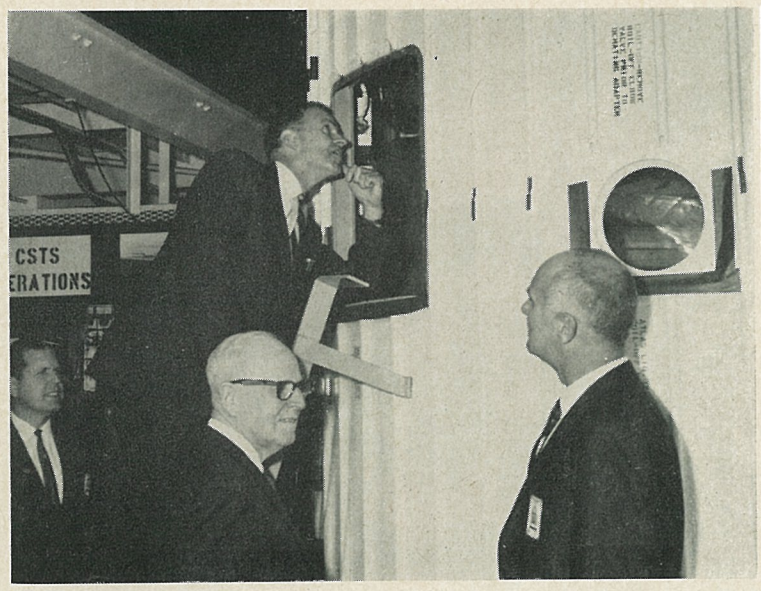
Air Transport Association's Maintenance and Engineering Meeting will be hosted by Convair May 17-19 at Vacation Village in San Diego.

Discussion will deal with all commercial versions of the Convair-Liner.

L. J. Keely, vice president of maintenance and engineering of North Central Airlines, is chairman of the three-day conference. L. J. Bordelon, manager of Convair commercial customer requirements, is coordinating arrangements.



"All right, fellows . . . you've had your little joke . . .
Climb up and let's go to work!"



ONCE-OVER—Rep. Lionel Van Deerlin (D-San Diego) peers at motors in Centaur inter-stage adapter standing in Combined Systems Test Stand (CSTS) at Convair's Kearny Mesa plant while Congressman George P. Miller (D-Calif.) examines exterior with Division Manager Jack L. Bowers. Standing at far left is Grant Hansen, vice president-launch vehicle programs. Miller spoke at Convair Management Club meeting same day—April 21.

Launch Vehicle Orientation Held For Hundred Visitors

More than 100 civilian, military, NASA and other governmental agency representatives were at Convair's Kearny Mesa plant three days last week for the division's sixth annual launch vehicle programs orientation course.

R. J. Voth, course chief, said the meeting was designed primarily for mission planners and managers, spacecraft contractors and project engineers.

After an opening presentation Tuesday by Grant L. Hansen, vice president-launch vehicle program, Atlas vehicle programs and systems were described by R. W. Keehn, D. W. Suchecki, Phil Genser and J. D. Kring.

Centaur program orientation, systems, facilities and performance were outlined Wednesday by Seymour Zeenkov, R. L. Forrest, J. S. Harrison and F. B. Anthony.

Atlas SLV-3 and Centaur program status reports were given by J. C. Cannady and an Orbital Vehicle 1 and scientific passenger pod presentation by Jack Hughes. The visitors toured Atlas and Centaur final assembly areas and NASA's combined systems test stand.

Presentations were given Thursday by G. W. Norris on spacecraft fairing systems; C. D. Pengelley and M. R. Barlow on spacecraft environmental parameters; R. L. Johnson on spacecraft-launch vehicle integration and software; Barlow on mission applications and extensions, and R. A. Nau on recoverable boosters.

Voth moderated an "open forum" technical discussion and final remarks were given by Hansen and G. J. Vila.

Club Rewards Cost Reducers

Three men who will save the division over $350,000 with their cost reduction suggestions were given "Man of the Month" honors for the first three months of the year at the last Convair Management Club meeting April 21.

W. W. Johnson, Dept. 954-1, received the January award for developing a computerized system for estimating and budget reports, eliminating manual reports to save $168,200.

The February title went to R. J. Ratliff, Dept. 016, for suggesting the use of plastic ties on harness bundles instead of waxed cord. Saving will be $88,619.

K. M. Boekamp of Dept. 149-0 is Man of the Month for March for his proposal improving procedure for testing using liquid penetrants. By substituting a water washable penetrant, the need for emulsifier, developer, and other operations were eliminated, saving $97,904.

J. M. Ibarra Jr. of Dept. 193-3 and B. P. Wheat of Dept. 578-3 were singled out as top Boosters for the month.

Linguist

Former Army Interpreter Teaches Noontime Course

Thomas L. Woodin, chemist in Convair manufacturing development, Dept. 491-0, combines his weekday lunch periods with an hour of teaching—of all things—mandarin Chinese!

Woodin learned mandarin at the Army language school in Monterey, then put it into practice as an interpreter-translator in Korea, Formosa and the Philippines during a year and a half of Army duty there.

Woodin's class at Clairemont High totals 23 students. He stepped into the teaching role last December when the regular instructor suffered a fatal illness. He works an additional hour at his regular job to make up for the time away.

"My students are exceptionally sharp and highly motivated," Woodin reported. "They probably will get scholarships, partly on the basis of their having had this preparation, and will continue the language at college."

Although mandarin is the chief dialect in China and is spoken in four fifths of the country, the Chinese in San Diego for the most part speak Cantonese.

"However, regardless of the dialect spoken, all Chinese read and understand the same written language," he said.

Woodin has been with Convair since 1961 and is group leader for manufacturing development chemical functions. He holds a degree in chemistry from La Salle College, Philadelphia.

TEACHER—T. L. Woodin, Convair chemist, reviews newspaper that will serve as teaching aid for high school Chinese course.

Early Day Photos At Convair Sought

A call is out for historical material and early Convair pictures, both of people and planes, to be put on display at the Convair Management Club's 25th anniversary June 8.

Anyone with such material is asked to call James Harter, ext. 1570, at Lindbergh Field plant.

'State of Art' Sessions Held For Engineers

Latest developments in manufacturing processes are being brought to Convair design engineers in a 10-week series of technical sessions.

The Design/Producibility Seminar, now in progress, is planned specifically to acquaint design engineers with up-to-date methods in the production of castings, forgings, extrusions, weldments, plastics, and methods of metal removal.

"If our engineers are going to design at the lowest possible cost, it is imperative that they keep abreast of the state of the art," F. D. Applegate, chief design engineer, mechanical and structural design, pointed out.

Applegate spearheaded plans to set up the program at Convair. He was assisted by Max Yale, George Trimlett, H. P. Williams, chief of design review and value engineering, Ward Wilcutt, Glen Bancroft, and H. D. Hoelter. Ed White is educational services coordinator.

Nearly 200 top design engineers in structural, mechanical, electrical, and electronics design have been attending sessions weekly in the Lindbergh Field engineering auditorium. The two-hour meetings are held twice, generally on Tuesdays.

Each seminar session is presented by a chosen specialty supplier. Technical discussion centers on materials, properties, design, criteria, limitations, quality control requirements, manufacturing problems, lead times, costs. A question and answer period closes each meeting.

Electronic Speciality Co. of Pomona and Precision Castparts Corp. of Portland, Ore., conducted sessions on castings last month.

Kaiser Aluminum of Baltimore, Md., will present material on extrusions next week, May 8 and 9. And the following week, on May 16, Wyman Gordon Co. of Worchester, Mass., will give the program on forgings.

$11,200 in Con-Trib Grants Disbursed

Convair Employes' Con-Trib-Club will give an assist to a party for handicapped people at this summer's San Diego County Fair.

The Con-Trib committee voted $500 for the purchase of food for the "Fun Fair Party."

Other donations approved last month were $7,500 for the San Diego unit, American Cancer Society; $150 to the Santa Maria Servicemen's Center; and $100 to the Boys' Club of Lompoc Valley. These last two contributions were made in the name of Convair employes at Vandenberg AFB.

Donations made upon recommendation of the Florida Employes' Advisory Committee were $1,000 to the Brevard Unit of the American Cancer Society and $500 to Jess Parrish Memorial Hospital to be applied toward the cost of an X-ray unit.

San Diego County Citizens' Scholarship Foundation received $1,500.

Mother's Day Menu Scheduled May 11

A Mother's Day dinner will be served for $1 in both Convair cafeterias next Thursday, May 11.

Menu will be chicken, potatoes and gravy, buttered peas, rhubarb sauce, roll, beverage, dessert.

Follow-on Contract Granted In Gravity Gradient Study

Convair division's investigation into the feasibility of woven screen deployable booms for stabilizing satellites has been extended with award of a follow-on contract from NASA's Goddard Space Flight Center.

The $55,000 contract will continue the gravity gradient boom research into late September, according to Abraham Hurlich, manager of materials and processes.

Initial study contract to determine feasibility of the new type of material for extendable booms was awarded Convair in August, 1965. Since then, Convair process development specialists have produced around 2,000 feet of the newly-developed woven screen for test purposes.

The screen consists of high conductivity beryllium copper alloy for circumferential wires and low expansion watch-spring type material for longitudinal wires. Brazed joints facilitate heat transfer between materials.

Booms of three different types of screen and a deployment mechanism for reeling and unreeling booms were delivered to Goddard last month.

Under the contract extension three booms, each 150 feet long, will be fabricated, and two improved deployers constructed. In addition, three short boom sections with two joints in each will demonstrate boom-joining techniques.

The program is being conducted in the materials and processes lab, located at the Lindbergh Field plant, by process development personnel under supervision of M. D. Weisinger, process development research group engineer.

H. Ross Wiant, manufacturing and development specialist, has headed the development program since its inception as project leader. He has been joined in its direction by Bernard Turvolin, senior research engineer, who recently transferred to Convair from General Atomic.

Toastmasters Club Marks Anniversary

Dynamics Toastmasters Club #457 will mark its 15th anniversary with a banquet Wednesday, May 24, at the Stardust Motor Hotel in Mission Valley.

The celebration will start with a no-host social hour at 5:30 p.m., followed by 6:30 dinner. Price is $5 a person.

Reservations will be taken through May 17 by either of the co-chairmen: Larry Sweeney at ext. 676 LF, or Cy Campbell, ext. 1854 KM, or any of the active members.

SATURDAY, MAY 27 WILL BE SALE DAY

Next salvage yard sales day at the Lindbergh Field plant is set for Saturday morning, May 27, 8 a.m. until noon.

PACIFIC WESTERN 640 DELIVERED

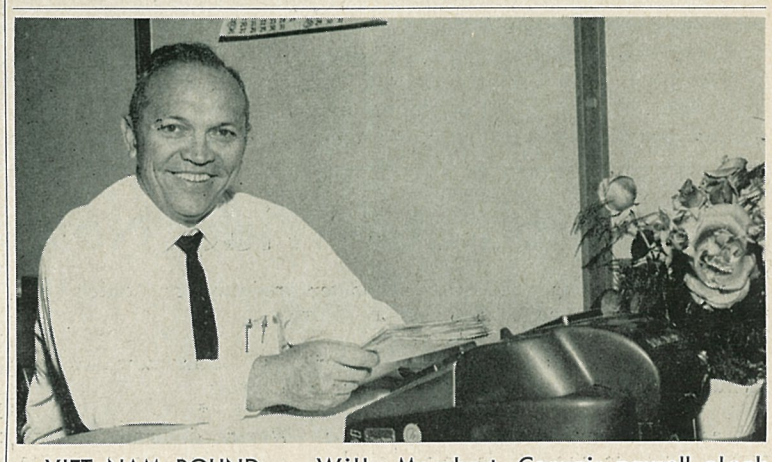
Pacific Western Airlines' last Convair 640 under the current contract was completed on schedule at the Convair Service Center and delivered to its Canadian base in Edmonton on April 17.

Convair pilots, R. T. Le Vine and Ed Emerson, were at the controls. Aboard were Tom McLaughlin, PAC Western chief of inspection, Vancouver, B.C.; J. B. Hurt, Convair 600/640 program manager; J. S. Boaz of contracts; and Frank Aitken of commercial sales.

This is the fourth Convair 640 to be delivered to PAC Western by Convair since February. All were modified to the Rolls-Royce Dart version at the Service Center.

Two will operate out of Vancouver on West Coast routes and two will be based at Edmonton for service on the airline's easternmost routes.

Inaugural flights were made April 18 and 19 from both bases with passenger service starting at 8 p.m., the following Sunday (April 23). According to reports received by Convair's program office, both passengers and crews were impressed and pleased with the planes' performance.



VIET NAM BOUND — Willy Merghart, Convair payroll clerk and native of Dutch East Indies, has accepted post as public safety adviser in Viet Nam.

Onetime Police Commissioner In Jakarta Returning to Asia

A Convair payroll clerk who struggled to get his family out of what is now Indonesia after the take-over by Sukarno, is returning to Southeast Asia because he feels he is needed more there than here.

Willy Merghart, who was born and raised in the Dutch East Indies, was police commissioner in charge of special forces in Jakarta at the time. He, his wife, Irene, and two young sons, Jerry and Winny, were brought out of Indonesia by the American Friends Society.

"After landing in this country — in New Jersey — I tried my hand at everything and anything to make a living," he said. "Among other things I worked as a machine operator and meat packer."

Now he is giving up his latest job—in Convair payroll—to go to Viet Nam as a public safety adviser for the U.S. State Department.

"I feel that I can help this wonderful country of ours much more in that troubled part of the world," Merghart said. "The government is badly in need of law enforcement there and I want to give of my knowledge and experience."

He became a U.S. citizen five years ago.

In his new assignment with the Agency for International Development, Merghart will report in Saigon after a six-week briefing in Washington, D.C. He expects to be in Viet Nam by June. His wife will be allowed to live in Bangkok or Manila during his tour of duty. She will be joined by their younger son, Winny, after he finishes Mesa Junior College next year. Son Jerry will remain behind. He has a family of his own now and is employed by the San Diego Gas and Electric Co.

Watching the Oceans: A report from General Dynamics

Wouldn't it be nice if you could plan a vacation and *know* weeks ahead that the weather would be good?

Actually, 24-hour local forecasting is right almost 85 percent of the time. But longer range prediction—on which can depend anything from a vacation trip to the success of a year's wheat crop—is far less certain.

Even though information from hundreds of full-time land weather stations is supplemented by measurements in the upper atmosphere and reports from weather satellites, a vital link in the chain has been missing.

Weather is essentially born or modified as a result of the interaction of sun and air with the oceans that cover two-thirds of the earth's surface.

Oceanography and meteorology can be considered two faces of the same coin—the study of the total marine environment. And relatively little is known about it yet.

Seagoing "weather bureau":

What has been needed to fill the gap is an oceanographic "weather bureau."

It would have to stay in place in the deepest part of the sea, regardless of storm or current; collect environmental information from the atmosphere, the surface and the depths; send that information regularly and correctly back to land.

And it would have to do all these jobs without human presence for long periods of time.

With a network of such sea stations seeded throughout the world, oceanic information could be integrated with that obtained from land stations and from space. Meteorologists could determine the patterns that will create the weather next week, or perhaps months hence.

Oceanographers could analyze the subsurface currents, the levels of dissolved nutrients in the water, the migratory patterns of fish to anticipate their location for commercial fishing.

And with navigation lights, fog horns and radar beacons at known positions, such a network would provide invaluable navigation aid for ships.

Monster buoys:

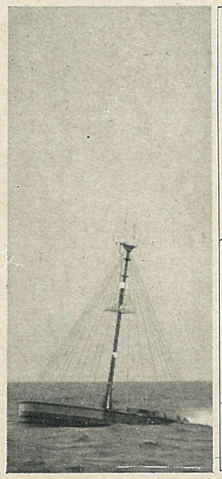
Today, the beginning of such a worldwide system may be at hand—an ocean data station, more commonly known as a monster buoy, developed and built by General Dynamics for the United States Navy's Office of Naval Research.

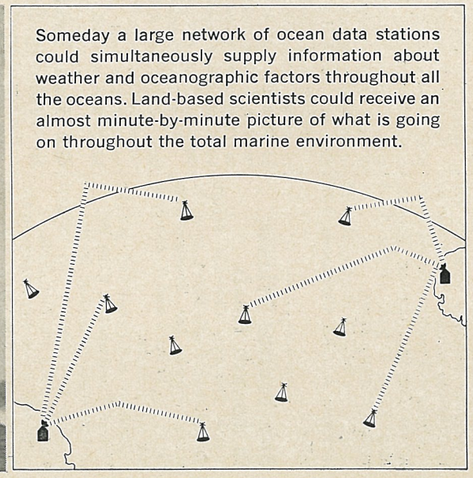
The first prototype has been undergoing sea trials since 1964, collecting and sending its information through calm and hurricane.

This ocean data system consists of a giant pieplate-shaped buoy, forty feet in diameter and seven and one-half feet deep, containing an assortment of environmental measuring devices and the electronic and power equipment to collect and transmit to shore the data acquired.

It can be "locked" in place, moored to an ocean floor as deep as 30,000 feet, by a plaited nylon cable only two inches thick. Although the buoys are presently designed to operate for a year at a time without human maintenance, the conventional propane-powered generator systems that provide electricity for the buoy's operation carry a two-year supply of fuel.

Unlike a traditional ship, which exaggerates the motion of waves, particularly in side-to-side pendulum-like rolling, the symmetrical, discus-shaped buoy hull follows the slope of the waves, reducing pitching and rolling to a minimum. Its stability keeps its omnidirectional antenna in proper position to radio information to a shore analysis station.





Someday a large network of ocean data stations could simultaneously supply information about weather and oceanographic factors throughout all the oceans. Land-based scientists could receive an almost minute-by-minute picture of what is going on throughout the total marine environment.

Defies hurricanes:

No one really knows just how rough the weather might get in a full-scale typhoon or hurricane—defined only as a cyclonic storm with winds of over 75 miles per hour—because of the obvious difficulty of humans taking accurate measurements under such conditions.

The General Dynamics/ONR ocean data station was designed to withstand winds of 160 miles per hour and waves 60 feet high.

Buoy Bravo, the first prototype, remained in place under winds of 110 miles per hour and waves 50 feet high during Hurricane Betsy in 1965, with no interruption in its flow of information. Its elastic nylon mooring line permits the buoy to drift slightly and then pull back to position without dragging its "anchor" of steel chain.

Typhoons and hurricanes, luckily occur only occasionally. But the intensely corrosive environment of the sea is constant. For protection, the buoy's steel hull, mast and antennae are coated with inorganic zinc and several layers of vinyl.

A hundred tests:

An assortment of sensors can be located on the 38-foot-high mast and on the radial spokes of the discone antenna to measure wind, humidity, precipitation, radiation (from the sky and reflected back from the sea), barometric pressure, and compass bearing.

Others inside and immediately under the hull will read water temperature at the surface, wave height, period and direction.

Clamped along the mooring line at regular intervals underwater, still others will measure temperature, pressure and salinity and determine the structure of subsurface layers of the depths.

Inside the hull, rugged electronic components and circuitry will acquire, store and transmit information from as many as 100 separate sensors.

These subsystems will be packaged in containers purged with nitrogen and hermetically sealed to provide an inert, absolutely dry, environment. The buoy at sea will provide better conditions for electronic equipment than does a dust-temperature-humidity-controlled laboratory ashore.

The data acquisition system will look at every sensor once an hour (or it can be monitored more often; individual sensors can be checked continually). Measurements will go into both a magnetic core memory with a capacity of 24 hours of data and a recorder that will store a full year's information.

Every six hours a ground station will interrogate the buoy, commanding it to transmit all information accumulated during the past twenty-four hours. Each discharge of data will provide an eighteen-hour overlap, giving scientists a continuous record.

The ground station will also instruct the buoy to transmit data on the particular one of its three radio channels which will assure best reception on shore of long-distance "bounce" off the ionosphere.

Benefit for all nations:

A few prototype monster buoys do not, to be sure, constitute a full-scale oceanic environmental survey. They do provide a starting point for a truly international system—one in which all nations would share, and from which all would benefit.

But now that the practicality of an ocean data station has been proved, the many elements of a total system are already being worked out: the optimum number and locations of stations to provide simultaneous coverage throughout the seas; ways to integrate at central analysis stations the ocean data with that from land and space; techniques of maintenance and replenishment for the seaborne network; development of devices to measure many kinds of subsurface phenomena.

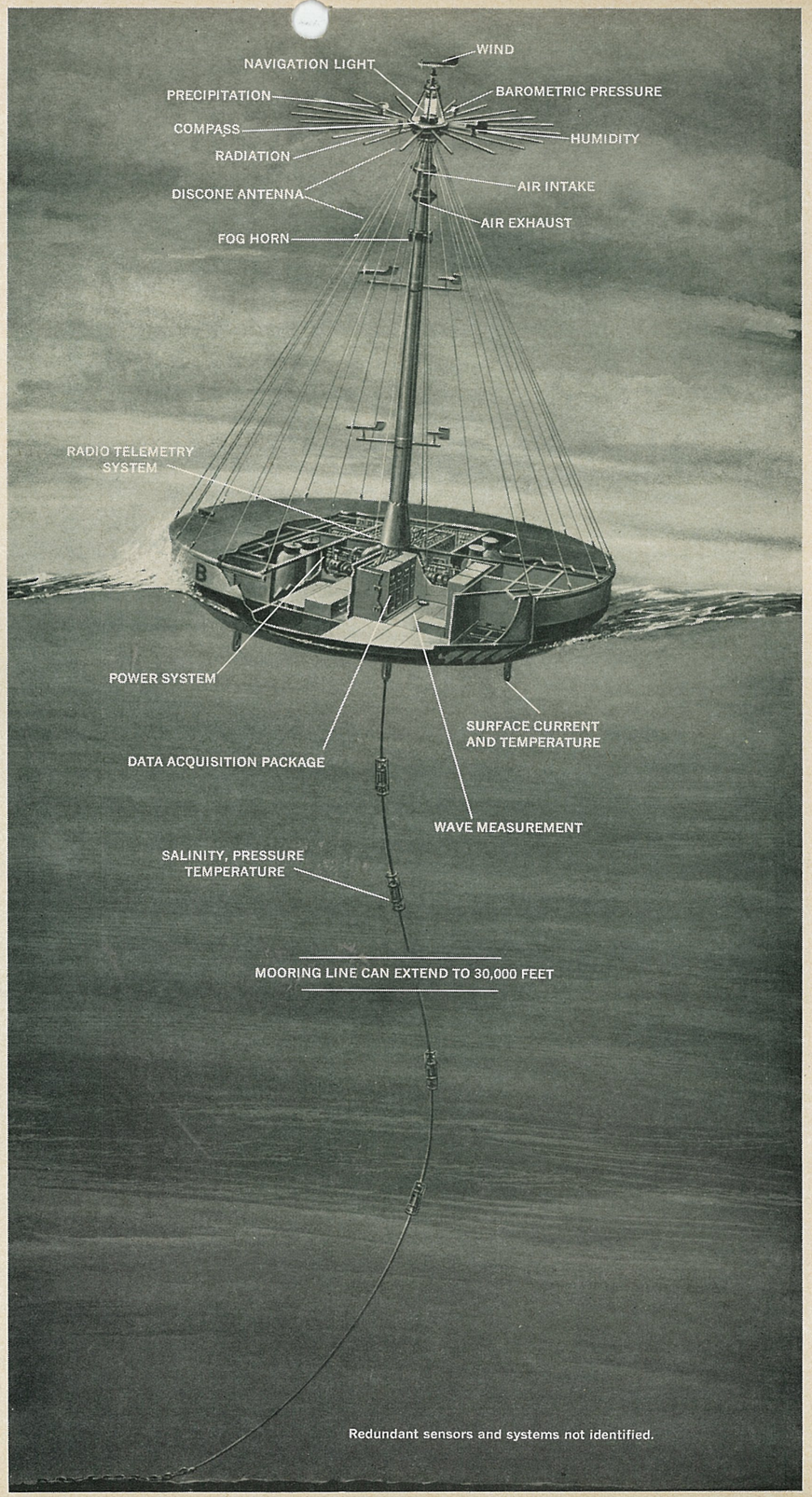
The day when data stations will be dotted throughout the oceans for a genuine oceanographic-meteorological environmental watch could come within a decade.

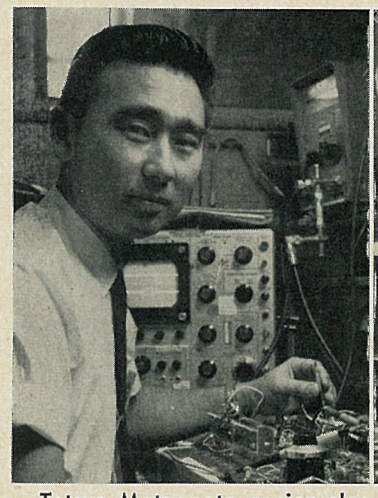
General Dynamics is a company of scientists, engineers and skilled workers whose interests cover every major field of technology, and who produce: aircraft; marine, space and missile systems; tactical support equipment; nuclear, electronic, and communications systems; machinery; building supplies; coal, gases.

Reprints of this series are available.

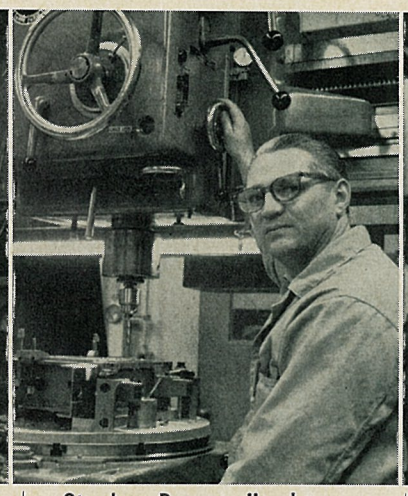
GENERAL DYNAMICS

One Rockefeller Plaza, New York, New York 10020





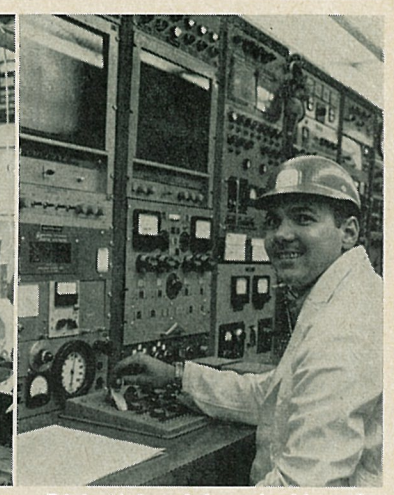
Tetsuo Matsumoto, senior electronics engineer in Dept. 541-0, is shown working on the microwave linear PIN diode modulator for the Army RMS-2 range measurement system backpack transmitter unit in an antenna and microwave lab in Bldg. 18, Kearny Mesa. A native Californian, Matsumoto received his bachelor's degree in electronics from Cal Poly. He has been with Convair since 1958. He lives in Mission Village with his wife, Jane, and daughter Elaine, 4.



Stanley Baron, jig bore machinist in Dept. 452-0, operates a Swiss-made precision jig bore machine in working on an F-111 aft pivot pylon part at the Kearny Mesa plant. A native of Poland, Baron attended technical schools there and in Switzerland before coming to the U.S. 13 years ago. He has been with General Dynamics nine years, including two years at General Atomic. He lives in La Mesa with his wife, Marie, and son, Tony, 16, and enjoys fishing.

Grace Cline has filed a lot of blueprints in her 15 years in the blueprint files of Convair and former Astronautics. The last six years she's been keeper of the files at Plant 19 where all blueprints pertaining to work done at that location on missiles, launchers, cables, etc., and vendor prints are kept. Grace lives in La Jolla and enjoys gardening, reading, writing. Her only daughter lives in Panama with her husband who is stationed there with the Air Force.

Willie Day, chrome plater in Dept. 002 at Lindbergh Field, started at Convair as a janitor some 25 years ago. He kept that job just six months before being promoted to sandblasting, then to plating. The parts he has just plated will go into the oven to be baked. Willie saw service in both Europe and the South Pacific during World War II. He and his wife, Verdie, and son, Richard, 10, live in the Logan Heights district. His main recreation is gardening.



Dick McLeod is unlocking the valve control lock on the console which opens the electrical circuits of the Convair high speed wind tunnel at the ramp. Dick is eight months into a two-year training program leading to a test lab technician's rating. He recently completed a four-year tour of duty with the Air Force, including a year in Viet Nam. He will be married next month to Phyllis Jones of Ramona. They plan to set up housekeeping in El Cajon.

INTERPLANT BUS SERVICE UPPED

Bus service connecting Convair Kearny Mesa, Lindbergh Field plants and AF Plant 19 has been increased by two round trips a day with a one hour turn-around on every trip.

Buses now leave Kearny Mesa on the hour every hour from 7 a.m. until 3 p.m. They arrive at Plant 19, south-bound, 20 minutes after the hour, and at Lindbergh Field five minutes later.

Return trips leave Lindbergh Field on the half hour throughout the day, terminating at 4 p.m. at the Kearny Mesa plant.

Departure points are northwest corner of Bldg. 5 at Kearny Mesa; southeast corner of Bldg. 7 at Lindbergh Field; and northeast corner of Bldg. 4 at Plant 19.

Service by bus to the Harbor Drive Test Site has been replaced by an "expedite truck" for both material and passengers, according to John Speed, transportation general foreman.

This truck is on a one hour turn-around schedule between Lindbergh Field, Plant 19, and Bldg. 52 at the seaplane ramp location. Departure point at Lindbergh Field is the corner of Bldg. 13; and Bldg. 36 at Plant 19.

First, Third Sundays Chosen For Shoots

The newly-reactivated Archery Club will hold shoots the first and third Sundays of each month. Shoots on the first Sunday will be for awards and the third Sunday shoots will be fun affairs for scores only, said Commissioner Al Stone.

Regular business sessions will be held the second Friday nights.

A single American target shoot is set for this coming Sunday, May 7, at 1 p.m. at the CRA range, Kearny Mesa.

Officers will be elected May 12 in Room A, CRA Clubhouse, 7:30 p.m.

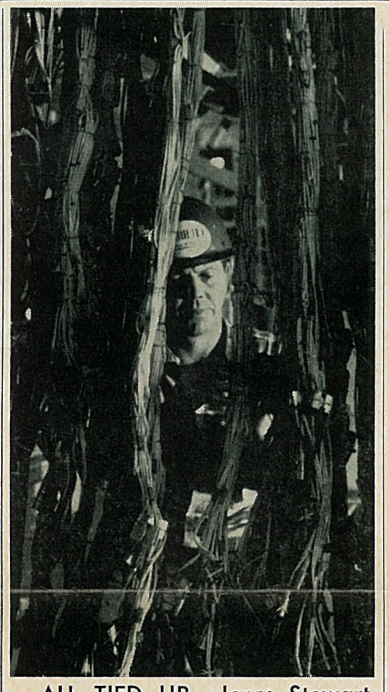
Bob Drowns Winner In Speech Finals

Bob Drowns, Convair design specialist in Dept. 952-4, won the speech finals for Toastmasters Clubs in Areas 1 and 7, comprising eight clubs.

Drowns represented North Shores Toastmasters Club No. 66 in the April 14 contest in the SD County Courthouse. His subject was "Victory in Viet Nam."

He will go on to compete in the District 5 contest May 6 at the Sands Hotel in which finalists from 48 Southern California groups will take part. Winner at the district level will be sent to Hawaii to compete in the Region 2 finals there.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!



ALL TIED UP—Jerry Stewart, Convair instrumentation technician, looks tangled in multitude of wires connecting strain gages in the F-111 now in static test at Convair structures test lab. Stewart is hooking wires to landline system which carries information from gages to recorders in lab's data station.

Safety Crib Hours Change

New safety crib hours at Convair's Kearny Mesa and Lindbergh Field plants and reopening of the safety crib at Air Force Plant 19 have been announced by Jack Garrison, chief safety engineer.

Hours for the safety cribs are:

Kearny Mesa—Monday, 1 to 5 p.m.; Wednesday, 8:30 to 11:45 a.m.; Thursday, 8:30 to 11:45 a.m., 2:30 to 5 p.m.; Friday, 1 to 5 p.m. (For emergency issues at other times, phone the safety office, ext. 765 KM.)

Lindbergh Field—Monday, 8:30 to 11:45 a.m.; Tuesday, 8:30 to 11:45 a.m., 2:30 to 5 p.m.; Wednesday, 1 to 5 p.m.; Friday, 8:30 to 11:45 a.m. (For emergency issues at other times, phone the safety office, ext. 464 LF.)

Plant 19—Tuesday and Thursday, 12:45 to 2:15 p.m. (For emergency issues at other times, contact the tool crib attendant, Bldg. 1, Col. C-28, ext. 1205.)

GD Men Take Office In Training Society

Jim Frandsen of General Atomic was installed president of the San Diego chapter of the American Society for Training and Development last Wednesday. He succeeds outgoing president, Wayne Turner, of Convair.

Other General Dynamics men taking office at the same time were Jack Croft of Convair, treasurer, and Emory Thurston, also of Convair, board member.

Please Give Advance Word When Seeking Travel Reservations

Convair people traveling on company business are urged to make airline and hotel reservations as far in advance as possible to obtain desired accommodations.

All reservation requests are handled as expeditiously as possible, John Ruzich, traffic supervisor, said. However, he pointed out that with summer travel and a heavy convention season approaching, it is more and more difficult to obtain requested transportation and hotel accommodations.

"If anyone intends to travel on the weekend, he should let the travel reservationists know as early in the week as possible," he stressed.

The Convair travel reservations office at Lindbergh Field is open daily, Mondays through Fridays, from 8 a.m. until 4:45 p.m., ext. 1426 LF.

The travel desk is not permitted to make personal travel reservations at any time and will not be able to assist in reservations for the International Fair at Montreal.

Ranscht, Knutson Lead Pistol Shoot

Warren Ranscht, J. S. Knutson and Roland Schneider took master class honors in a CRA Pistol Club Camp Perry course match at the SD Police Range with scores respectively of 295, 293, and 288. Perfect score would be 300.

Top three men in expert class and their scores were Bill Dittmann, 281; Angrum B. Carlson, 278; and Pete Ward, General Atomic, 275.

Members of the club will elect officers at a meeting in conjunction with the next match at 9:15 a.m. May 14 at the Police Range.

Trailerites Shift Date For Outing

Road Runners' monthly outing has been set ahead a week, to this coming weekend (May 5-7), to avoid conflict with Mother's Day.

The trailerites will travel to Barrett Lake Trailer Park.

Ed Wawrzynski led the group on the April 14-16 weekend at Ramona Oaks Ranch. Eighteen gathered for the Saturday evening potluck to see slides on India shown by Fred Stone, club president. The Monds, Rogers, and Wawrzynski families won gifts in the Sunday drawing.

SET MODEL SHOOT

CRA Camera Club will hold a model shoot May 21, 7:30 p.m. in Photo Arts Bldg., Balboa Park.

'Controlled Component' Plan Extended to More Hardware

Convair's "controlled component" program has been extended to cover selected hardware for Atlas SLV and Atlas E and F as well as Centaur vehicles.

Under the program, history jackets will be maintained continuously for several hundred critical components. Each controlled component will be identified by a special decal.

J. E. Cook, supervisor of launch vehicle programs-quality assurance (Dept. 957-0), is responsible for program implementation and history jacket effort coordination. He reports to F. R. Lee Jr., manager of LVP-reliability control.

History for each of the controlled components will include data from its date of manufacture, including information on all inspections, tests, storage handling, rework, repair, and installation.

"A component may be disqualified for flight if it has been subjected to greater than normal testing or use, if its test reports show an adverse trend, if its history shows an undesirable combination of repair and rework," Cook said.

Tennis Beginners Classes to Start

Two beginners classes in tennis will begin next week at the courts in the CRA recreation area, Kearny Mesa.

The response has been so great that a second class was necessary, said Bob Herold, CRA commissioner.

The classes will be held Tuesdays and Thursdays from 5 to 6 p.m. for 10 weeks. First sessions are May 9 and 11.

For more information call Herold, ext. 2035 KM, or Jim Jobe, ext. 1157 KM.

Circuits Tested Automatically By Electronics' New COMPACT

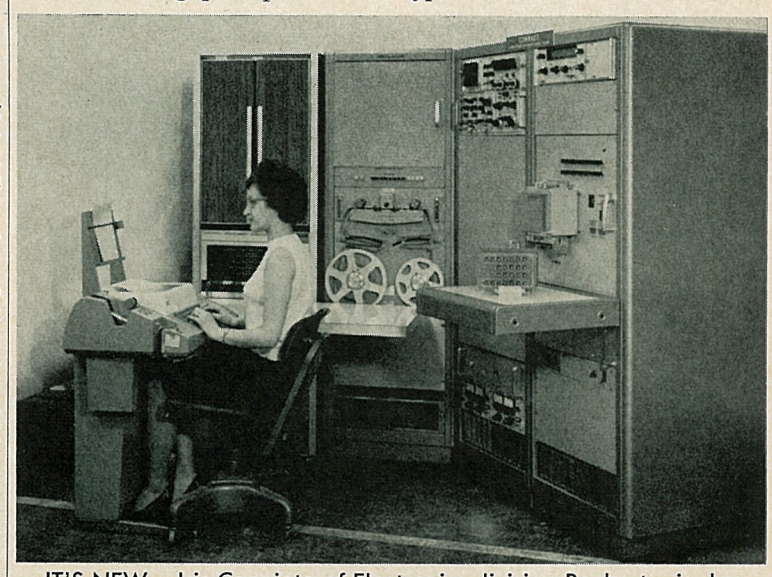
A computer controlled automatic circuit tester called COMPACT has been developed by Electronics division's test equipment engineering department at Rochester, principally for production testing of printed circuit cards on the division's Autodin project.

COMPACT, however, has capabilities for testing a wide variety of logic oriented circuits, modules and integrated circuits.

COMPACT is completely automatic. It is only necessary for the operator to insert the proper program board, plug in the device to be tested and press the start button. COMPACT will perform all the required tests with no further operator intervention and display the results as go or no-go. A typical test on a P.C. card containing perhaps 50 individual tests would require about three seconds to run. This same card tested on a general purpose manual tester could require more than an hour to test. Tests which can be performed on this machine include DC, functional digital, and switching time.

The tester is controlled by a general purpose digital computer and interface adapter. A high speed perforated tape reader and typewriter are included as peripheral equipment.

Programming is done in a symbolic language (scatran). This language is in turn translated and assembled by a computer program into an eight-level tape which is used by the operating program to perform the tests. Direct programming can be done by typing in instructions from the typewriter.



IT'S NEW—Iris Cannioto of Electronics division-Rochester is shown operating COMPACT, new testing device, computer controlled.

Golf Deadline Date Extended

Management Club golfers may still sign for the NMA Western Division golf tournament with extension of deadline date to this Friday, May 5.

Also, all Convair entries from the Management Club will get a $2 rebate on the $15 fees, John Mellett, Convair club golf committee chairman, said. Total fee must be remitted with entry application and the refund will be made at the time of the tournament.

The 36-hole play will take place May 13 and 14 at Cottonwood and Rancho Bernardo courses. A barbecue at Cottonwood Country Club will be Saturday evening.

Trophies and gift certificates will be awarded in each flight. Guests will get trophies and cash prizes. Low net winner will play off with the Eastern Division winner at Pebble Beach.

For information call Mellett, ext. 1044 LF, or Terry Kell, ext. 605 LF.

Radio Club Elects Tipton President

Norman Tipton (WB6LLJ) will head the Convair Radio Club as president for the new club term.

Joseph Miller (WB6PWM) is newly elected vice president and Dale Taber (WA6YHA) secretary-treasurer. William Roden (WB6JWQ) will be responsible for the operation of club equipment as station engineer.

A transmitter hunt will be held tomorrow, May 4, at 7:30 p.m. on 29,500 KC. All hams with loops on 10 meters are invited to participate. Members and non-members are urged to meet at the CRA Clubhouse by 7 p.m. so that they will be ready to begin promptly.

A field day is planned for the middle of June. All amateur radio operators planning to take part should contact Tipton, ext. 1450 KM, or CRA Commissioner Fred Schulz, ext. 1392 KM.

30 Couples Graduate In Dancing Course

Thirty couples wound up their ballroom dancing course with a dance April 24 in CRA Clubhouse, Commissioner Royce Riggan said.

Earl Fisher's four-piece orchestra furnished the music.

Another in the continuing series of instruction courses will begin next Monday, May 8, in the Clubhouse.

Registration will be accepted at the first class for both beginners and intermediates. Beginning class is at 7 p.m.; intermediate at 8:45.

Cost of either of the 12-lesson courses is $18 per couple.

Bob McGlade, professional instructor, will teach both. Beginners learn basic ballroom dancing steps. Intermediates progress to the fox trot, waltz, swing, cha-cha, rhumba, samba, and tango.

For further information call Riggan, ext. 1018 LF.

Softball Managers To Meet Tomorrow

Softball managers who have teams entered in CRA intramural softball leagues are urged to attend a meeting in CRA Clubhouse tomorrow (May 4). The managers meeting will be in Room C at 7 p.m.

Nights of play will be discussed and practice games assigned. League play will start the week of May 22.

Two From Convair Displaying Photos

Verne Heger and Gary Kornmayer of Convair are displaying in the photographic exhibit at the San Diego Fine Arts Gallery, Balboa Park, this month. The exhibit, titled Focus, highlights avant-garde photo imagery.

Heger is supervisor in Convair still photo lab at Kearny Mesa plant while Kornmayer is a communications specialist in art and editorial's presentation section.

BEAUTIES, BOTH—Monique McCullough of Convair admires rose, "Hawaii," which won queen-of-show honors for Henry Boyd, Dept. 041, in Convair Garden Club's annual spring rose show.

'Hawaii' Entry Queen of Show

Henry Boyd's orange-rose entry, Hawaii, took top honors as "queen of show" at the Convair Garden Club's annual Spring Rose Show April 16 in the Floral Association Bldg., Balboa Park.

Although number of entries was less than last year, because of the winds and rain a few days before the show, the quality of the blooms was better than average, Commissioners Everett Henderson and Gene Zimmerman said.

A total of 376 entries was counted in all classes with more arrangements and corsages than ever before entered. Exhibitors showed 292 rose entries.

Other best of show awards went to Lora Lee Young, three grandiflora, and three grandiflora sprays; Jim Buman, grandiflora one spray; Carolyn Buman, best arrangement and best corsage.

Mrs. Buman's prize-winning corsage highlighted the pure yellow cymbidium orchid grown by Henderson. The seedling had bloomed for the first time and is the only one of its kind, as far as is known.

Cindy Sinnott, daughter of Jack Sinnott (Dept. 059-1) and granddaughter of Commissioner Zimmerman, won best children's entry.

Other winners were Margaret Boyd, John Bales, Al and Marge Hornby, Pat Hannay, Isabelle Cole, Earl McDaniel, Evelyn Finley, Charles Lewis, S. J. Williams, Mr. and Mrs. Felix White, Mr. and Mrs. E. L. Zimmerman, Dennis Zimmerman, Bill Spann, W. H. Marshall, Mr. and Mrs. Arnold Carroll, W. J. Cole, Mr. and Mrs. John Volper, Mr. and Mrs. Charles Splinter, Mr. and Mrs. Bob Bradshaw, Audrey Sletnar, Norraine Boyle.

Children's winners were Lisa Sinnott, Dianne Lewis, and Janice Zimmerman.

Rancho Santa Fe Goal of Bicyclists

Next family ride for Convairiders, CRA bicycling group, will be through the Rancho Santa Fe area Saturday, May 6.

Non-members and guests are welcome to join in the 25-mile event, said Chuck Cearley, ride leader. Riders will meet at 10 a.m. at the fire station in the Rancho Santa Fe business district.

For further information call Cearley at ext. 3671 KM or home phone, 273-1530.

Jerseys marking 200 miles of cycling were awarded to Augostino Arcidiacono, Dept. 963-6, and Terry Hughes, son of John A. Hughes of the LVP project office.

Sign-ups Under Way For Baseball Trip

Advance reservations are being accepted now for the first baseball trip of the year to the Angels vs. Minnesota game in Los Angeles on Sunday, May 21. Price for transportation and admission is $5.50. Buses will run from both Kearny Mesa and Lindbergh Field plants. Sign at CRA Clubhouse, Kearny Mesa, or Lindbergh Field employe services, Bldg. 16.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111, Kearny Mesa. Deadline for next issue of GD/NEWS is May 9. Call ext. 1071 LF or 3322 KM.)

* * *

ADVENTURERS—Meeting May 17, 7:30 p.m., CRA Clubhouse.

ARCHERY—Target shoot May 7, 1 p.m., CRA range. Election of officers May 12, 7:30 p.m., Room A, CRA Clubhouse.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING — Instruction starts May 8, CRA Clubhouse. Call Royce Riggan, ext. 1018 LF.

BOWLING—Summer leagues forming now. Call CRA Headquarters, ext. 1111 KM.

BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS—Meeting Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS—Meeting May 17, 7:30 p.m., Convair cafeteria, LF .

CONVAIRIDERS—Meet May 6, 10 a.m., at fire station in Rancho Santa Fe for the 25-mile ride.

DELTA DIVERS—Meeting May 10, 7:30 p.m., CRA Clubrouse.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING—Meeting May 16. Potluck at 6:30 p.m., meeting at 7:30.

GARDEN CLUB—Meeting tonight, May 3, 7:30 p.m., Floral Association Bldg., Balboa Park.

HI-FI/MUSIC—Meeting May 9, 7:30 p.m., CRA Clubhouse.

ICE SKATING—GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

PISTOL CLUB—Shoot May 14, 9:15 a.m., SD Police Pistol Range, Home Ave. & Federal Blvd.

RADIO—Transmitter hunt tomorrow, May 4, 7:30 p.m., CRA Clubhouse.

RIDING—Meeting May 10, 7:30 p.m., CRA Clubhouse.

RIFLE—Senior shoot May 10, 7:30 p.m.; junior shoot May 6, 1 p.m., Gillespie Field Range.

ROAD RUNNERS—Outing to Barrett Lake Trailer Park this weekend, May 5-7.

ROCKHOUNDS—Annual Gem Show May 13-14, CRA Clubhouse. Open to public, free admission.

ROLLER SKATING—Free General Dynamics skate night May 15 at Skateland, Front and G Sts. Tickets at employe services outlets.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB—Annual club ski races at Mammoth May 6-7. Call Robin Bithell, 296-6098, for reservations. Water skiing every Saturday, 9:30 a.m., Crown Point. Call Harry Eastman, 274-4982.

SOFTBALL—Managers meeting tomorrow, May 4, 7 p.m., Room C, CRA clubhouse.

SPORTS CAR CLUB—Meeting May 10, 7:30 p.m., Convair executive dining room, LF.

TENNIS—Beginners classes start May 9 and 11, 5-6 p.m., CRA courts. Annual spring tournament May 13-14, 20-21, 27. Call Bob Herold, ext. 2035 KM, or Jim Jobe, ext. 3468 KM.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse. Dynamics club's 15th anniversary May 24, Stardust Motor Hotel.

TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

WOMEN'S GOLF—Monthly tourney May 13, San Carlos course. Tee-off times start at 8 a.m.

Heart Fund Shoot Scheduled May 13-14

General Dynamics shooters are invited to participate in the annual Oliver E. Owen Jr. Memorial Heart Fund Shoot May 13-14 at the Otay Winchester Gun Club, Chula Vista.

A Winchester shotgun and a case of ammunition will go to the overall high gun.

Shooting will be from 9:30 a.m. to 2:30 p.m. both days. Entry fees are $2.50 for each skeet event and $5 for each trap event. Contributions to the San Diego County Heart Association are tax deductible.

Entry forms will be available at the club on the day of the shoot.

Jim McGinnis Voted Delta Divers' Prexy

Jim McGinnis was chosen president of Delta Divers, CRA skin diving group, in recent election of officers.

Frank Whitton is new vice president; Jack Fisher, secretary; and Loren Batchman, treasurer. Jorge Zorrilla will serve as membership committee chairman.

Dues are payable by May 31 for the 1967 season. Membership fee of $3 covers an entire family.

Hardy Water Skiers Defy Chilly Winds

Water skiing is going on every Saturday morning at Crown Point where the hardier Convair skiers have been gathering for several weeks. At least one of the Ski Club's boats is on hand by 9:30 a.m. to tow skiers. Harry Eastman, club vice president, asks all skiers intending to take part to call him at his home phone, 274-4982, so that he can make arrangements for more boats if needed.

Leagues For Summer Bowling Start Organizing Next Week

Leagues are forming now for the summer bowling season starting next week and running into late August.

CRA leagues will bowl at six local alleys on the following schedule:

Claremont Bowl—Monday, Men's 510 Trio or 640 Foursome; Tuesday and Friday, Mixed Handicap Foursomes.

Parkway Bowl—Monday, Men's 510 Trio or 640 Foursome; Tuesday, Mixed Handicap Foursome.

El Cajon Bowl—Thursday, Mixed Handicap Foursome.

Frontier Lanes—Wednesday and Thursday, Mixed Foursomes (Electronics and Convair).

Victory Lanes—Thursday, Mixed Foursome.

Pacific Recreation—Thursday, Mixed Trio; Friday, Men's Trio.

All leagues start at 6:30 p.m. each evening.

CRA will furnish team trophies and individual awards for all leagues. The number of trophies depends upon the size and type of league.

To sign for league play contact one of the CRA commissioners: Forest Erwin, ext. 2884 KM, home, 444-0042; Mike Brooks, home, 469-8793; Jim Hayman, ext. 1360 LF, home, 466-1262.

Annual Spring Tennis Tourney Will Involve Three Weekends

The annual spring tennis tournament, sponsored by the CRA Tennis Club, will be held over the last three weekends of this month.

Men's singles matches will be May 13 and 14; men's doubles and women's singles will be played May 20 and 21; and mixed doubles will be played May 27. Competition will be in masters, advanced, intermediate, and novice divisions.

All General Dynamics people, their families, and guests are eligible. Naval Electronics Laboratory employes are also invited.

Entrants should contact the following tournament committee members: Cecil Norwood, ext. 2766 KM, for masters and advanced; Mike Griggs, ext. 3536 KM, for intermediate; Jim Jobe, ext. 1157 KM, novice; and Bob Herold, ext. 2035 KM, women's singles and mixed doubles.

Entries must be received by 4 p.m. May 10. Participants will be notified of their match time.

Skiers Will Bus to Mammoth For Season's Last Expedition

Convair skiers will travel to Mammoth Mt. this weekend (May 6-7) for the annual club races.

All skiing clubs in the area are eligible to compete in the giant slalom on Sunday for the club championship, CRA Commissioner Joe Harris said.

Novice skiers will vie in a fun race Saturday. After skiing on Saturday, all will gather at Hot Creek springs for swimming.

"Snow should be excellent," Harris predicted. "It will probably be at least 15 feet deep and well packed."

The bus trip, last for the season, will start from Kearny Mesa parking lot Friday evening at 6 p.m. Cost for round-trip transportation, two nights lodging at Mammoth Mt. Inn, and two breakfasts and one dinner is $34 each.

For reservations call Robin Bithell, ride coordinator, at his home phone, 296-6098.

Barbara McGregor Equitation Winner

Barbara McGregor outpointed all entries in the equitation class at CRA Riding Club's April 16 open fun show.

Mike DeLeonardo was high point contestant in gymkhana events.

Fifty riders vied in the all-day show at the CRA Horse Ring. Gretchen Tank judged equitation and David Watson judged gymkhana.

Boyd Spencley was show master; Ken Smith, ring master. Timekeepers were Clyde Donahoo, Judy Watson, Bob Underwood, and Jay Harmer was announcer.

Regular club business meeting will be May 10 in the CRA Clubhouse. Next horse show is planned for Saturday, May 20.

3,000 EXPECTED FOR GEM SHOW

Some 3,000 people are expected to visit the 1967 Gem Show sponsored the weekend of May 13 and 14 by Convair's Rockhound Club in CRA Clubhouse auditorium, Kearny Mesa.

The two-day showing of "everything for the rockhound" will be open to the public, free of charge. Hours on Saturday will be from 10 a.m. to 10 p.m.; on Sunday, 10 a.m. to 6 p.m.

Spectators will see demonstrations of gem polishing and a black light exhibit of fluorescent materials, Jim Sugg, show chairman, said.

Exhibits will include gem rough and mineral specimens, cabochons, fossils, crystals, old bottles. Besides displays by members of the CRA group, there will be entries by other clubs, dealers, and well-known gemologists of the area.

A rock swap will be held, door prizes awarded, and refreshments served during both days.

SHOW PREPARATIONS—Jim Sugg (left), chairman of coming Gem Show, holds large natural crystal, weighing 5 lbs., and Chuck Purdy, CRA Rockhound president, positions inlaid resin table top as they prepare for annual show May 13-14.

Employment in Aerospace Set For Increase

Employment in the aerospace industry is expected to reach 1,384,000 by September, 1967, an increase of 3.4 per cent above the 1,339,000 employed in September, 1966, Karl G. Harr Jr., president of the Aerospace Industries Association, announced last month.

This forecast is based upon a survey by AIA of 60 companies representing about 80 per cent of the entire industry.

Last September, AIA predicted that industry employment would reach 1,349,000 by the end of 1966, an increase of 11 per cent above December, 1965. Actually, employment reached 1,371,000 in December, 1966, 1.6 per cent higher than the AIA estimate.

Harr said that "the steady growth in the numbers of men and women who are being employed by this industry demonstrates conclusively the good health and stability which have been achieved in a relatively short span of years."

Continuing demand for civilian aircraft, stable levels of missile and space sales and increases in non-aerospace activities account for the high demand for all types of employes.

Employment in commercial and military aircraft production is expected to increase six per cent from 115,605 to 122,001 by September. Scheduled deliveries of jet transports, along with the increase in orders for military aircraft and an increase in jet transport exports have stimulated aircraft manufacturing employment.

Missile and space manufacturing employment is expected to increase slightly from 496,000 to 498,000.

Aerospace plants engaged in non-aerospace activities expect by September to experience an increase of two per cent to 57,000. Last September the total was 56,000 and in December, 1965, 49,000, an indication of the increasing diversification and application of the industry's technology to programs such as water desalination, air and water pollution control, waste management, oceanographic research and communications systems and equipment.

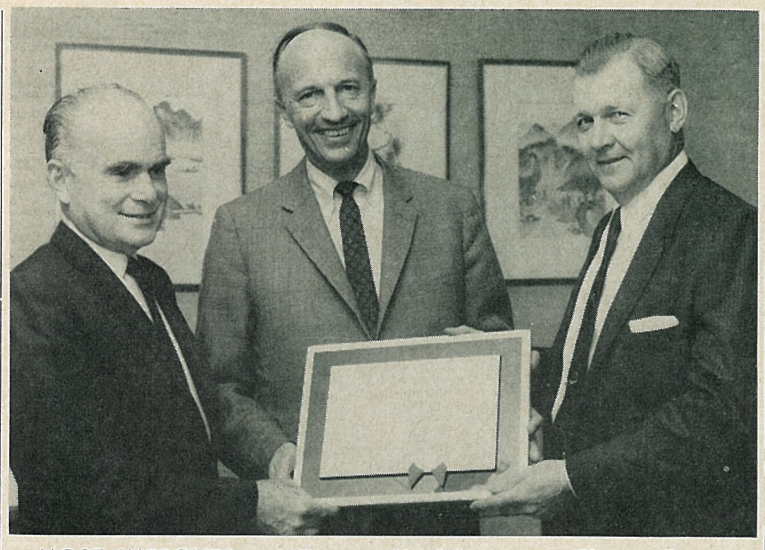
Of the total aerospace employment, production workers are expected to constitute almost 55 per cent; scientists and engineers, more than 17 per cent; technicians, seven per cent.

The most rapidly increasing segment of aerospace employment is production workers. They are expected to increase from 713,000 to 756,000.

The number of scientists and engineers is anticipated to rise by five per cent from 226,000 to 237,000.

Employment of scientists and engineers in missile and space plants is expected to increase from 101,000 to 103,000.

The number of technicians employed in the industry is expected to rise from 92,000 to 94,000.



MOST IMPROVED — Herman Hanink, center, Electro Dynamic division general manager, accepts best safety improvement award for division's record in 1966. At right is Carl Holschuh, group vice president-Marine Systems, and Algie A. Hendrix, Corporate vice president, at left.

BEST RECORD — Parker Painter, center, Electronics division general manager, accepts best safety record award for his division's performance in 1966. Jack Graham, group vice-president-Electronics and Industrial Group, is at left and Algie A. Hendrix, Corporate vice president, at right.

Microphotos Earn Awards in Contest

Convair microphotographic entries took over half the awards in the annual metallurgic contest sponsored by the San Diego chapter of the American Society for Metals at Vacation Village April 11-12.

Of the 12 awards given, entries of Bob Naber and Fritz Jorrey of materials and processes' metallographic laboratory won firsts in the two categories of welding, brazing, joining techniques, and refractory and composite materials, besides two seconds and two thirds. Another entry prepared by A. S. Mehner, engineering metallurgist, took a second in the electron microscopy class.

National Society Elects Convair Man

H. B. Day, chief of Convair graphic reproduction, will serve as national director for the Society for Reproduction Engineers during the next two years. Day was elected one of the seven new directors at the April 11-12 national delegates meeting in Chicago, Ill.

He was general chairman of the Visual Communication Congress sponsored by the Society in Los Angeles last fall and current chairman of the San Diego chapter.

Engineers Present Paper at AIAA Meet

Three Fort Worth division engineers presented a paper at the American Institute of Aeronautics and Astronautics thermophysics specialist conference recently in New Orleans.

They are P. R. Cheever and J. K. Miles, senior nuclear physicists, and John Romank, staff scientist. All are in Dept. 061-2.

Texas and Florida On Daylight Saving

Daylight Saving Time went into effect last weekend in most of the states in which General Dynamics has plants or facilities. For the first time the change is in effect in Texas (Fort Worth division and Daingerfield facility) and in Florida (Eastern Test Range).

Electronics, Electro Dynamic Win Corp. '66 Safety Contest

Accident prevention has an important influence on the cost of doing business, Algie A. Hendrix, Corporate vice president, stated recently as he took part in safety award presentations to Electronics and Electro Dynamic divisions.

Electronics won the "best record" award in the 1966 Corporate safety contest and Electro Dynamic won the "best improvement" section.

"Our first concern is the safety of the individual employes — to eliminate the impact of injuries and the temporary or permanent impairment of job capability and earning power," Hendrix commented.

"However, the other side of the accident prevention coin is cost — the cost of accidents, their effects on our profits and our ability to compete for business and grow as a Corporation."

Hendrix quoted Roger Lewis, General Dynamics president, as stating: "Profit is the difference between cost and price and that is the direct result of day-by-day initiative and effort by individuals fighting for small decreases in cost and small increases in revenue — item by item and minute by minute."

Hendrix said the statement is nowhere more relevant than in the area of accident prevention.

"Accident costs are difficult to pinpoint, but we know they are substantial when we measure the costs of insurance, ruined materials and equipment, and speculate on the intangible costs in lowered morale and disrupted schedules."

Hendrix congratulated both divisions on their 1966 safety triumphs, achieved despite stiff competition from other Dynamics divisions.

"These records couldn't have been realized without getting everyone on the safety team and setting before them the clear goal: fewer accidents," he said.

Important factors at Electronics included establishment of an active safety committee consisting of a cross-section of management which succeeded in getting line supervision actively involved.

Playing helpful roles at Electro Dynamic were establishment of an intensified housekeeping program and increasingly thorough follow-up on accident investigations.

Hansen Will Receive Leadership Award

Grant L. Hansen, Convair vice president-launch vehicle programs, will receive a special "recognition award" May 13 from the Illinois Institute of Technology Alumni Association for his "leadership and exceptional scientific and technological accomplishment" in connection with NASA's historic Surveyor 1 mission.

Hansen is a 1948 IIT graduate.

Phoenix Missile Fired From F-111B Scores 'Hit'

Successful launching of a Phoenix missile from a U. S. Navy F-111B has been hailed as a major milestone in the F-111B Phoenix missile and airborne missile control system, developed by Hughes Aircraft Co.

Although previous launchings had been accomplished from A-3A Skywarrior equipment, this was the first launching of a Phoenix guided missile from an F-111B. The missile registered a "scored hit" on a drone over the Pacific Ocean off Pt. Mugu, Calif.

Hughes Aircraft's Leonard Gross, vice president and aeronautical systems division manager, reported all test objectives met.

"The significance of this launch lies in the fact that it demonstrates the successful integration of the Phoenix and the F-111B aircraft into a complete working weapons system," he was quoted in the Hughes publication Hughes News.

The Phoenix system consists of the AWG-9 airborne missile control system (AMCS), the missile launchers and the AIM-54A Phoenix missile. Missions will be to provide fleet air defense and maintain air superiority over distant areas such as beachheads.

For on-board target acquisitions, the AMCS includes a long-range high-power pulse doppler radar. The system has a "look down" capability that enables it to pick moving targets out of the ground clutter.

AMCS will introduce into the fleet for the first time in an aircraft the ability to track many targets at once, with computer-aided selection of target priority. The system is designed for virtually simultaneous launch and guidance of several missiles against separate targets.

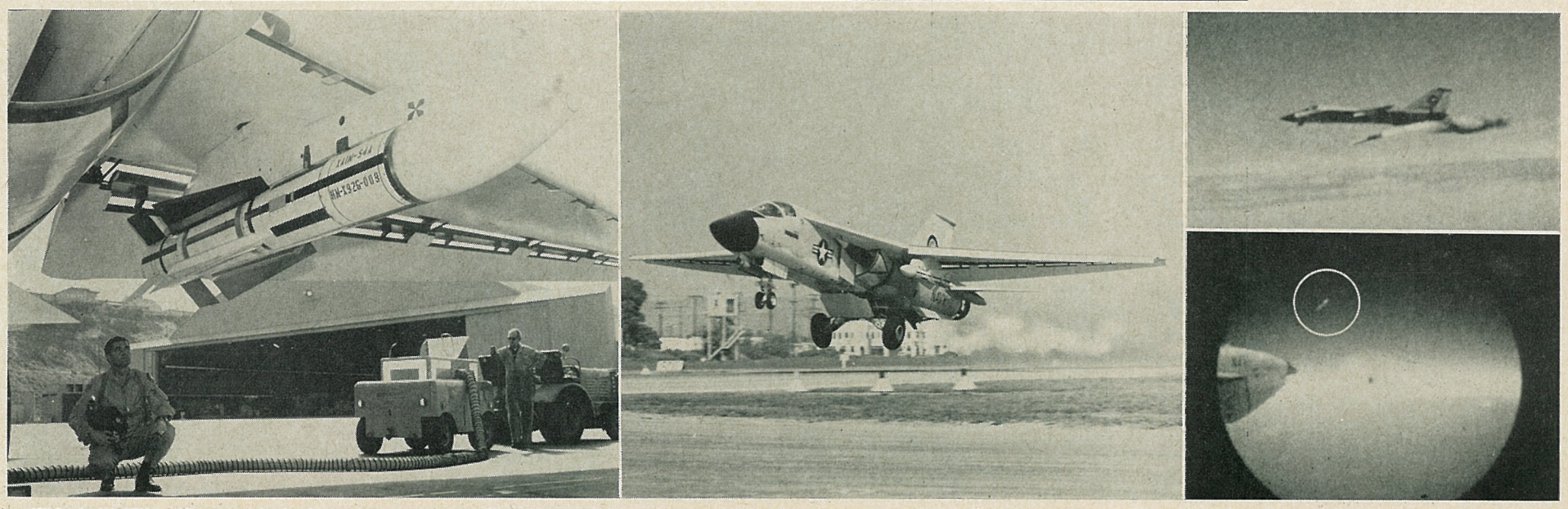
The long-range capability of the Phoenix system in combination with the ability of the F-111B to maintain station at long distance from its parent carrier, will enable the missile to intercept enemy aircraft well outside the range at which they could launch stand-off weapons at the fleet.

Coast Guard Buoy's Mast, Hull Mated

Superstructure for the first U.S. Coast Guard sea buoy, developed by Convair, was mated to the buoy hull at Groton, Conn., last week.

The steel hull, built at Electric Boat division, was launched April 17. The mast, built in Convair's experimental department and trucked to the East Coast early last month, was erected on the hull April 26. Electronics equipment is now being installed within the hull.

Design and development of the buoy is responsibility of Convair ocean data station program personnel.



IT'S A "HIT"— First guided Phoenix missile launched from U.S. Navy's F-111B registered "scored hit" on drone recently in test launch over Pacific Ocean off Pt. Mugu, Calif. At far left, Hughes Aircraft Co. Test Pilot Bart Warren checks wing-mounted missile. Center: takeoff from Culver City, Calif. strip. Top right: missile blasts away and heads for target. Lower right: camera aboard drone catches missile in flight (see circle).

BUY A BOND—Angela Alioto of Dept. 515-0 offers saving bargain—U. S. Savings Bonds. They may be purchased by payroll savings for as little as 50 cents a week.

Systematic Purchasing Of Savings Bonds Urged

Convair division's 1967 campaign to encourage widespread, regular U. S. Savings Bonds purchase by payroll deduction got under way this week and will continue through May 26.

"Now is the time to begin systematic purchase of Savings Bonds, if you are not already participating," Jack L. Bowers, Convair general manager, commented.

In a recent letter to all employes, Bowers listed two primary reasons.

"Purchase of bonds indicates that all of us as individuals are interested in helping our country — and ourselves," he said. He pointed out further that bond purchases help strengthen the nation's security and economy.

Bowers stated that Series E bonds represent a good personal investment. They now return 4.15 per cent interest.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Employes also will have an opportunity to sign up for the new "Freedom Shares" which may be purchased only in combination with Series E bonds starting with the pay period ending Aug. 6. "Freedom Shares" return 4.74 per cent interest if held to maturity in just 4½ years and may be cashed in if necessary one year from issue date.

Minimum deduction per pay period for purchase of Series E bonds is 50 cents for hourly employes and $1 for salaried personnel. Minimum deduction per pay period for the Series E and "Freedom Shares" combination is $1.04 for hourly employes and $2.08 for salaried employes.

Both "Freedom Shares" and

(Continued on Page 2)

SAN DIEGO EDITION

GENERAL DYNAMICS
NEWS

Vol. 20, No. 10 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, May 17, 1967

F-106 Follow Contract Ups Mod Units to 269

Number of in-flight refueling modification units for F-106 jet interceptors which Convair division will produce for the Air Force has been increased to 269 with award of a follow-on contract.

Original production order of 60 units was awarded Convair last July by San Antonio Air Materiel Area, Kelly AFB, Texas.

Current order brings the total dollar amount to near $5 million for fabrication of kits, engineering services, technical data, and spare parts.

Deliveries will start next month and continue through December of this year.

Convair developed the engineering design for installation of the F-106 aerial refueling system and boilerplated an F-106A for flight test by the Air Force. The test program was concluded last month when Maj. Richard E. Merkel of Air Defense Command took off from Holloman for an 8-hr., 20-min. flight, refueling three times in flight from a Strategic Air Command KC-135 tanker from Walker AFB, N.M.

REFUELING—F-106 jet interceptor is refueled from KC-135 tanker in mid-air over Holloman AFB during testing of new in-flight refueling modification. Convair is building modfication kits.—AF Photo.

AF Contract Awarded To Build F-106 Kits

A contract which could amount to as much as $800,000 for kits to install an improved tactical air navigation (TACAN) system on F-106 interceptors has been awarded Convair by the Air Force.

Funding of $301,089 has been provided to start production on 272 kits in a letter contract received this month from San Antonio Air Materiel Area, Kelly AFB, Texas.

Final contract terms, covering technical data and spare parts in addition to kit fabrication, will probably be definitized within the next couple of months.

Delivery of kits will start in September of this year and continue into the summer of 1968.

The kits will consist of all equipment required for installation of the new TACAN unit, an improved ultra high frequency system, in F-106 aircraft.

Electronics division's Rochester operations is producing the TACAN units under a subcontract from Hughes Aircraft Co. (**GD/NEWS**, Aug. 10, 1966). TACAN is part of the MA-1 radar armament control system that Hughes originally built for the F-106.

The improved unit is the first to use micro-electronic circuitry and will be a third the size and

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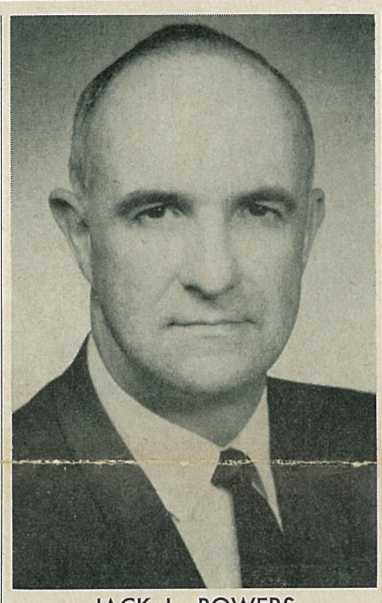

JACK L. BOWERS

Bowers, Laney Appointed Corp. Vice Presidents

General Dynamics has appointed Jack L. Bowers, general manager of Convair division, and Robert V. Laney, general manager of Quincy (Mass.) division, vice presidents of the Corporation, Roger Lewis, president, announced early this month.

Bowers, a veteran of more than 21 years in aircraft and space systems engineering and management, has been with General Dynamics since 1946, except for four years starting in 1960 when he was vice president and general manager of the Electronics division of Avco Corp. He rejoined General Dynamics in June, 1964, and was named Convair general manager in September of the following year.

Born in Colorado Springs, Colo., Bowers received a BS in electrical engineering from Carnegie Institute of Technology in 1942 and has done graduate work at both UCLA and New York University.

He first joined the Company in 1946 as a research engineer in Convair division. He was chief system design engineer in 1952 when he transferred to Pomona division as assistant chief engineer-development. In 1956 he was assigned to the then Astronautics division and was assistant chief engineer-design when he joined Avco.

Holder of the Legion of Merit, Bowers was a captain in the U.S. Air Force during World War II. Wartime duty included assignment to the Air Force Special Projects Laboratory at Wright-

(Continued on Page 2)

Close-Support Plane Contract Awarded

Convair division has been awarded a contract for more than $200,000 by the Air Force Systems Command's Aeronautical Systems Division (ASD) at Wright-Patterson AFB, Ohio, for preliminary design and other studies for the A-X specialized close-air-support aircraft.

The studies will be part of the concept formulation phase of development in which the military need and concept of operation, feasibility, cost and best characteristics of the new A-X aircraft will be defined and analyzed.

Similar four-month study contracts also have been awarded to Grumman, Northrop, and McDonnell aircraft companies.

Jack L. Bowers, general manager, said Convair division won the A-X study contract in a fierce competition against most of the major aerospace firms in the country.

"Even though three other companies are involved in similar studies, this win shows that Convair is actively competitive in the subsonic aircraft field," he said.

"This award was based in part on knowledge gained in our Charger program, in which we devoted thousands of hours of study on our own to learn everything we could about the requirements and operating environment for this type of aircraft. In the Charger program, we learned that an aircraft of greater capability was needed—so the A-X is a natural follow-on.

"The A-X study gives us an opportunity to bring together a seasoned team with broad aircraft experience to work on a vitally important new aircraft program."

Mort Kantor is program manager and the A-X project team (Dept. 580-1) is located in Bldg. 5 at Lindbergh Field. Kantor previously had responsibility for Convair division advanced tactical aircraft studies and formerly served several years as division chief of systems analysis.

Robert D. Small is assistant program manager. Other key personnel for the study and areas of responsibility include T. F. Car-

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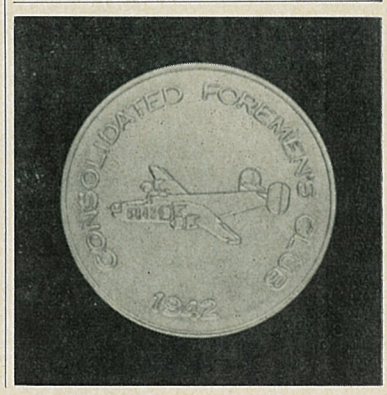

Club Silver Anniversary Will Be Gala Affair

Souvenirs, commemorative coins, memorabilia and anecdotes of the last 25 years will mark Convair Management Club's Silver Anniversary dinner meeting next month, June 8, in the International Room of El Cortez Hotel.

Over 1,000 are expected to mark the 25th year of the club's existence and to renew memories of the years since a small group of foremen banded together to form the Consolidated Foremen's Club. That group was chartered on June 8, 1942. Today, the Convair Management Club, an affiliate of the National Management Association, boasts a membership of over 2,500.

Tickets, at $5.50 each, are now on sale by Management Club Boosters at all division sites. Free parking will be provided near El Cortez.

The evening will begin with a social hour at 6 p.m. followed with a showing of a Convair film at 7. Steak dinner will be served at 7:30 p.m. A Dixieland jazz band will play during the cocktail hour and dinner.

(Continued on Page 2)

Coins Commemorate Club's Anniversary

Orders for Management Club's 25th anniversary commemorative coins are being taken by Helen Cook, ext. 3146, Kearny Mesa, on a first-come basis.

Payment must accompany order. The silver, dollar-size coins are selling for $3 each and the brass ones for $1.

Coins will be ready for delivery following the June 8 anniversary meeting, but only those who have ordered and paid for theirs in advance may be sure of getting one.

All members attending the anniversary dinner will receive a brass coin free.

Log Book Entries

Papers Presented

CONVAIR

ACKLEY—R. A., Dept. 142-1, and S. H. LOGUE, Dept. 596-0, "A Laser Interferometer and its Application to Vibration Amplitude Measurement." Institute of Environmental Sciences, 1967 Annual Meeting, Washington, D.C., April 11-12.

ADSIT—N. R., Dept. 572-1, "Aluminum-Boron Composite Materials." Pacific Northwest Metals and Minerals Conference, Portland, Ore., April 19-21.

BUJKOVSKY—G. J., Dept. 563-0, "A Computerized Traceability System for Electronics Manufacturing." ASTME Annual Engineering Conference, Chicago, Ill., April 24-28.

GETTY—R. C., Dept. 584-0, "Spacecraft Thermal Joint Conduction." AIAA/Thermophysics Specialist Conference New Orleans, La., April 17-19.

LANGFORD—G. J., Dept. 491-0, "Plasma Arc Welding Complex Joints in Titanium." American Welding Society Meeting, Detroit, Mich., April 24-28

LUDWIG—C. B., C. N. ABEYA, R. S. JANDA, Dept. 596-0. "Hot Water Vapor Emission at Pathlengths Up to 300 cm-atm-1," Optical Society of America, Annual Spring Meeting, Columbus, Ohio, April 12-14.

LYNCH—R. A., Dept. 581-5, "Variable Geometry Maneuverable Spacecraft Study." Canaveral Council of Technical Societies' 4th Space Congress, Cocoa Beach, Fla., April 3-6.

MOFFAT—D. W., Dept. 542-0, "Detailed Component Measurements for Systems Criteria by Computer." IEEE Region III Meeting, Jackson, Miss., April 17-19.

Papers presented at Society of American Value Engineers' National Convention, Chicago, Ill., April 24-26:

HELLER—E. D., Dept. 192-0, "Expanding the Value Engineering Effort."

RIDGE—W. J., Dept. 192-0, "Value Analysis of Management Practices (VAMP)."

Papers presented at Aerospace Medical Association's 38th Annual Meeting, Washington, D.C., April 10-13:

BRADY—J. F. and B. D. NEWSOM, Dept. 592-0, "The Use of a Cockpit Mockup Within a Revolving Simulator to Measure the Effect of Changes in the Dynamic Environment Upon Pilot Response.

NEWSOM—B. D., Dept. 592-0, "The Orbital Research Hospital."

NEWSOM—B. D., R. L. WOLF, E. J. RUSS, Dept. 592-0, "Lunar Simulator for Metabolic Studies of Prolonged Duration."

O'LAUGHLIN—T. W., J. F. BRADY, B. D. NEWSOM, Dept. 592-0, "Reach Efficiency in a Rotating Environment."

SHAFER—W. A., Dept. 592-0, "Further Development of the Field Effect Monitor."

STEADMAN—J. W., D. W. VORBECK, Dept. 592-0, "Development of an Underwater Bio-Telemetry System."

Papers presented at Military Operations Research Society's 19th MORS Symposium, Fort Bliss, Texas, April 25-27.

NILSON—M. C., E. S. SAARI, A. P. RITTER, Dept. 581-6, "Design Selection by Compatibility Rating of Mission Requirements and Candidate Spacecraft Concepts."

SAARI—E. S., M. C. NILSON, A. P. RITTER, Dept. 581-6, "The Effect of Intelligence Requirements Upon Spacecraft Design.

Service Emblems

CONVAIR

Service emblems awarded between May 1 and May 15.

Thirty-five-year: Dept. 200, J. P. Hopman.

Thirty-year: Dept. 041, N. P. Pearson; 144, W. K. Baker; 149, G. E. Forbes, B. C. Piland.

Twenty-five-year: Dept. 015, F. E. Slayton; 016, L. W. Barbour; 031, L. L. Bishop; 056, P. M. Prophett; 115 H. A. Mellinger; 149, L. J. Kaiser; 191, L. G. Facka; 511, G. C. Haas, H. D. Heltzel; 514, J. K. Williams; 761, C. E. Roach Jr.; 800, J. M. Rogers.

Twenty-year: Dept. 059, D. Zatarian; 149, J. E. Dearmin, L. B. Muzzy; 508, A. F. Williams; 578, H. Akiyama; 756, M. L. Cole; 762, W. C. Chandler; 842, Joan M. Noga; 962, Y. K. Hong; 985, D. W. Grundstrom.

Fifteen-year: Dept. 002, C. H. Gray, W. F. Petty Jr.; 015, P. M. Kaufenberg; 027, R. R. Johnson; 130, H. R. Blevins; 142, G. Bax; 144, H. G. Haxby; 146, J. M. Norman; 170, J. T. Berthelet; 196, A. A. Valasakos; 403, L. C. Albright; 507, F. T. Ferguson; 511, G. C. Haag; 574, A. P. Ritter; 580, J. A. Brown; 585, R. A. Westerwick; 587, C. J. Tanner; 762, R. H. Steinberg Jr.; 810, R. W. Harris Jr.; 834, T. Rockar; 988, J. R. Tooth.

Ten-year: Dept. 005, C. W. Henry; 016, J. Breitenbach; 113, L. G. Nelson; 130, G. M. Clarke; 140, Violet S. Miller; 143, W. H. Dean; 144, W. P. Wilson; 149, W. L. Bilbrey; 170, J. C. Rigdon; 250, H. N. Finley; 401, Mary B. Rausis; 491, P. J. Lusk; 507, J. Cordova; 508, E. Collinge; 519, H. M. Woffinden, W. H. Worthington; 520, S. B. Hodge; 524, Catherine M. Long; 545, J. M. Christy; 565, H. C. Durfee Jr.

Dept. 578, F. Di Piazza; 596, S. Kaye; 780, Dolores Gross, Mary Jo Kriens; 820, W. B. Jones Jr.; 832, W. K. McCreary, C. R. Penley Jr.; 833, M. D. Sabin; 950, E. E. Barringer; 965, C. E. Tucker; 979, F. J. Adams, R. O. Boles, R. L. Bray, G. Fayer, R. C. Folmar, D. C. Haggard, C. C. Hayes, E. B. Kelley, J. C. Marks, A. R. Mewbuorn, L. E. Van Horn, W. H. Walker, J. Warrick Jr., A. O. Weinberg; 985, J. Regula, R. B. Shoemaker; 986, M. T. Giavelli.

ELECTRONICS

Fifteen-year: Dept. 204, Elizabeth M Walker; 422, A. O. Aasen.

Ten-year: Dept. 713, R. E. Russell; 775, J. F. Harrison.

STROMBERG-CARLSON

Ten-year: Dept. 85, R. E. Turnage Jr., P. O. Wilson.

Retirements

CONVAIR

BOMMARITO — Carlo, Dept. 250-3. Seniority date Jan. 15, 1940, retired April 28.

GREENLEAF—Stanley C., Dept. 400-3. Seniority date Feb. 17, 1936, retired April 17.

HUFF—John, Dept. 250-5. Seniority date July 18, 1957, retired March 5.

JOHNSON—Hadley, Dept. 840-0. Seniority date March 8, 1948, retired April 28.

KING—Julia M., Dept. 420-1. Seniority date Sept. 6, 1951, retired April 28.

PEARCE—Robbie M., Dept. 170-9. Seniority date June 1, 1959, retired April 8.

ROWLAND—Joseph E., Dept. 642-1. Seniority date Aug. 11, 1947, retired April 16.

SCHMIDT—Raymond J., Dept. 975-0. Seniority date Jan. 7, 1957, retired April 30.

SLOAT—Howard V., Dept. 460-0. Seniority date May 1, 1959, retired March 28.

VAUGHAN—George D., Dept. 832-2. Seniority date Oct. 7, 1955, retired Jan. 16.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending April 28.

Dept. 002-0, E. Fountain, C. W. Johnson; 027-0, O. C. Persley; 031-0, H. Anderson, G. Hill; 059-3, R. L. Kellogg; 130-5, Belva Jacobs; 143-1, J. W. Pullis; 144-1, G. R. Gray; 149-1, L. B. Muzzy; 250-5, J. H. Gahagan; 400-6, T. E. Njos; 420-1, R. Conshafter; 420-6, V. J. Shandera; 454-0, H. F. Davis; 715-0, J. A. Pinson; 717-0, O. L. Riddle; 733-0, R. R. Robinson; 756-0, A. N. Williams; 761-0, C. W. Neal; 780-0, J. D. Jones; 780-1, B. C. Anthony, W. F. Strickland; 831-0, G. Sandoval, J. A. Starr; 836-1, R. T. Riding; 840-1, W. R. Teran; 957-0, J. I. Homan.

SERVICE CENTER

Dept. 300-0, H. D. Pasley, I. E. Schulz.

CONVAIR

Employe Suggestion awards approved for the week ending May 5.

Dept. 027-0, W. Hoover, F. Serio; 049-0, L. J. Baldwin; 142-1, L. S. Chicoine, D. W. Yakey; 144-2, R. L. Williams; 191-0, H. D. Kielmeyer; 250-0, I. Vanderheiden; 250-3, J. T. McElroy; 403-3, R. E. Bruce; 410-0, D. G. Tessereau; 578-1, R. Rote; 756-0, W. J. McKillip, D. E. Tibbs; 762-0, R. L Robinson; 820-0, H. A. Billings; 840-2, V. J. Barber; 841-0, G. Lewis; 966-4, C. C. Dickinson; 979-1, C. J. Beverlin; 979-2, F. G. Hagerman; 979-3, A. J. Traum; 979-6, P. A. Manning; 985-1, B. Slot; 985-3, R. N. Schmidt; 985-4, M. C. Brooks.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Monday, June 5, and 4:30 p.m., Wednesday, June 7. Lindbergh Field, ext. 491, Bldg. 14 auditorium, 8 a.m. and 4:30 p.m., Tuesday, May 23.

PROFESSIONAL/TECHNICAL

TEKTRONIX SCOPE OPERATION—Six-hour course on theory and use of 535/545 scope. Starts May 22. 6-8 a.m. or 2:30-4:30 p.m., Mon., Tues., Thurs. Enrollment is limited. Call Dick Forrest, ext. 1931, Kearny Mesa, for information.

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931, Kearny Mesa.

Personals

CONVAIR

We wish to extend our sincere thanks to our Convair friends, especially those in Bldgs. 33 and 5 at Kearny Mesa, for the many cards, flowers, and acts of kindness following the recent loss of our husband and father, John F. Slobig Jr. Your generosity at our time of need was deeply appreciated and sincerely accepted.

Irene Slobig and family.
Dept. 780-1

* * *

We wish to express appreciation for the flowers and expressions of sympathy received after the death of our wife and mother, Martha Graham.

R. J. Graham and family
Dept. 964-2

* * *

The family of Charles N. Thompson (retired) gratefully acknowledges your kind expressions of sympathy at his death.

Deaths

CONVAIR

FARNUM—Delbert L., Dept. 732-0. Died April 25. Survived by sister, Alice M. Benson, and brother of San Diego.

MILLER—Virgil T., Dept. 957-0. Died May 4. Survivors include wife, Claudine.

SERVICE CENTER

KRUEGER—H. C., Dept. 300-2. Died May 2. Survivors include his wife, Bess.

Invention Disclosures

CONVAIR

BLUTINGER—B., Dept. 988-40. Electronic Voting Machine.

BROWN—W. R., Dept. 963-8. Colored Light Blender.

SWETT—B. P., Dept. 506-1. Mechanical Separation Device.

Births

CONVAIR

PARKER—Son, Gregory J., 8 lbs., 12½ oz., born March 13 to Mr. and Mrs. Anthony T. Parker, Dept. 584-1.

Rider-Driver

CONVAIR

RIDE WANTED—From Escondido to Kearny Mesa, 8 a.m. to 4:45 p.m. shift. Phone Q. E. Clem, ext. 1741 KM.

RIDE WANTED — From 42nd & El Cajon to Lindbergh Field plant. 8:00 a.m. to 4:30 p.m. shift. Call Sara Whisler, ext. 715 LF.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Close Support Airplane Contract Awarded Convair

(Continued from Page 1)

taino, operations analysis; G. F. Campbell, aircraft analysis; J. E. Burgeson, system configuration design; R. M. Williams, technical development planning; and A. D. Riedler, V/STOL studies.

Kantor said assistance for the study will be provided by Pomona division on infrared missile threat data, Fort Worth division on F-111 attack operations data, and Canadair on CL-84 V/STOL experience.

An on-site Bendix study team, under the direction of R. H. Johnson, will provide supporting avionics subsystem analysis.

Air Force officials said Convair and the other three contractor firms are expected to explore various design concepts for the A-X which would be relatively inexpensive, rugged and highly survivable.

"The A-X is expected to be cheaper and simpler than the A-7 but with capabilities equal to or better than the A-1," ASD representatives said. "Its performance would overlap that of the OV-10 at the lower end of its capabilities and the A-7 at the upper end.

"It should be able to operate from medium length prepared runways at maximum gross weight or from short runways with a reduced payload. It would require a moderately high cruise speed for quick reaction time and a low speed necessary for attack and re-attack agility.

"The A-X would enter the Air Force at a reasonably early date. The time frame for its operational capability must await completion of the current studies."

'Maximum Value Performance' Trophy Goes to Material Dept.

Convair's material department won the division cost reduction "maximum value performance" trophy for March with savings totaling $913,303 — 182 per cent above the department's $323,200 goal for the month.

The savings resulted from more than 80 cost reduction and value control projects approved during the month.

H. E. Moose, director of material, received the trophy from E. D. Bryant, vice president-operations. The trophy was on display for material department personnel at Lindbergh Field early this month and is now on display at Kearny Mesa.

Moose has commended members of the department for their efforts and stressed need for even greater savings in order to meet increasingly difficult cost reduction goals established by the department.

DIVISION WINNER—H. E. Moose, left, Convair director of material, shows members of his staff division "maximum value performance" trophy awarded material department for best cost reduction performance in March. Others, left to right, are R. N. Babcock, C. G. Keach, W. G. Evans, L. A. Wood, and G. W. Zahrte.

27 Commendation Certificates Recognize Cost Reductions

Twenty-seven Convair reliability control department employes have received commendation certificates from L. I. Medlock, director of reliability control, for first quarter cost reduction and value control projects that are expected to save the division $311,376.

Highest single saving of $35,426 was credited to Richard S. Campbell, manager of procurement quality assurance, Dept. 144, for a project related to handling and storage of electronic parts, in a joint effort with Frank Parker, chief of shop order and work-in-process stores, Dept. 830. Total savings will be $70,852.

Other members of the department receiving certificates and amount of savings are:

Don Miller, $31,641; Leon Davis, $22,116; Lon Franklin, $21,600; William Olson, $21,600; Robert Roscoe, $21,400; R. J. Hendrickson, $21,376; Emil Franke, $16,947; Wesley Knox, $12,362; William Hollar, $12,362; William Wade, $10,800; L. I. Fredrickson, $10,800; Richard Schmidt, $10,800; William Lux, $10,700, and Gerhardt Gross, $10,189.

Also David Williams, $6,922; Steve Teggart, $5,712; Robert Bell, $5,503; B. A. Buffat, $5,005; John King, $4,826; Fred Lay, $2,856; W. C. Seaforth, $2,717; C. L. Amaral, $2,641; Joseph Bowers, $1,653; William Johnston, $1,244; Mark Saunders, $1,120, and William Kirk, $1,058.

COMMENDATION—Richard S. Campbell, left, manager of procurement quality assurance, receives commendation certificate from L. I. Medlock, Convair reliability control director, for $35,426 cost reduction saving.

Bond Buying Urged

(Continued from Page 1)

Series E bonds are exempt from state and local taxes and federal tax may be deferred until they are redeemed.

All employes not currently enrolled in the payroll savings plan will receive further information from their supervisors, along with a "Join the Star Spangled Freedom Plan" pamphlet which explains details of bond purchase options.

Bowers, Laney Appointed Vps Of Corporation

(Continued from Page 1)

Patterson Air Force Base, Dayton, Ohio.

In November, 1966, he received the NASA Public Service Award for "outstanding contributions as a key leader of the government-industry term" for the manned Gemini program, in which the Atlas served as the launch vehicle for the Agena rendezvous and target vehicle.

Bowers and his wife Mildred have two sons, Bruce and Steven, and two daughters, Ann and Robin.

* * *

Laney, a 1939 U. S. Naval Academy graduate with an MS in naval architecture, MIT, 1944, grew up in Fort Worth, Texas. He was a Navy captain in 1959 when he left the Naval Reactors Branch of the Atomic Energy Commission to join the Quincy shipyard, then a part of Bethlehem Steel Corp. He headed the project that resulted in construction of the world's first nuclear-powered guided missile cruiser Long Beach, and was project manager for the world's first nuclear-powered guided missile destroyer, Bainbridge.

When General Dynamics acquired the Quincy yard in 1963, Laney was appointed general manager of the facility. Since then, under his direction, Quincy has successfully bid on 14 Navy support ships and is a contender for the FDL (Fast Deployment Logistic) ship program.

The yard also constructed three instrumentation ships for the Apollo space program, a variety of commercial marine craft and four nuclear submarines.

* * *

In addition to Bowers and Laney, other division heads who also are vice presidents of General Dynamics are Frank Davis of Fort Worth division, Charles F. Horne of Pomona division, Patrick H. Hoy of Material Service, Frank Nugent of Freeman Coal and United Electric Coal, Frederic de Hoffmann of General Atomic.

Carl G. Holschuh, recently appointed general manager of Electric Boat division, also is General Dynamics group vice president, Marine Systems.

Silver Anniversary Will Be Gala Affair

(Continued from Page 1)

Highlights of the years will be touched on in short talks by some of the charter members, program managers, division executives. The walls will be lined with historical photographs and models of the products developed in the last quarter of a century.

Souvenir programs will contain historical data and souvenir glasses and coins will be available to those present. Anyone wishing personal photos as mementos is urged to bring his own camera.

Letters of invitation have gone to executives of other General Dynamics divisions as well as to heads of other San Diego companies and civic and community officials. All charter members will be guests of honor.

Anyone lacking transportation may contact Larry Lawson, ext. 705 at the Convair Lindbergh Field plant.

Contract Awarded

(Continued from Page 1)

weight of the former system. It will provide F-106 pilots with range and bearing from ground stations and range between planes equipped with similar TACAN. It also has a built-in self-test gear to check out the operational status of the system.

Responsibility for Convair's task is in the hands of the F-102/106 program office under C. S. Brandt, program manager; B. F. Ferguson and J. J. Wheeler, deputy program managers. David Snell is project engineer.

It's Too Much!

Convair Daughter Attending School in American Samoa

Skin diving in the blue waters of Fagasa Bay, joining in a Samoan wedding party, meeting the King and Queen of Tonga, will be some of the adventures Convair daughter, Mari Jennings, will pass onto her Claremont (Calif.) High School classmates this fall when she returns from a term of school in Pago Pago, Samoa.

Mari Jennings

Mari, 17, daughter of Harry Jennings, maintenance analyst in plant engineering at AF Plant 19, flew to Pago Pago the first of the year to join her friend, Priscilla Lane, whose father teaches in the high school there under an American government program. The two girls are attending Fla Iloa High School.

"Samoa is beautiful beyond imagination — even the ugly things are beautiful in their own way," writes Mari. "Everywhere you look you see big, steep, very green tropical hills sprinkled with a few small white houses. For the most part, the houses are nestled at the bottom of the hills in the narrow strip connecting hills and water."

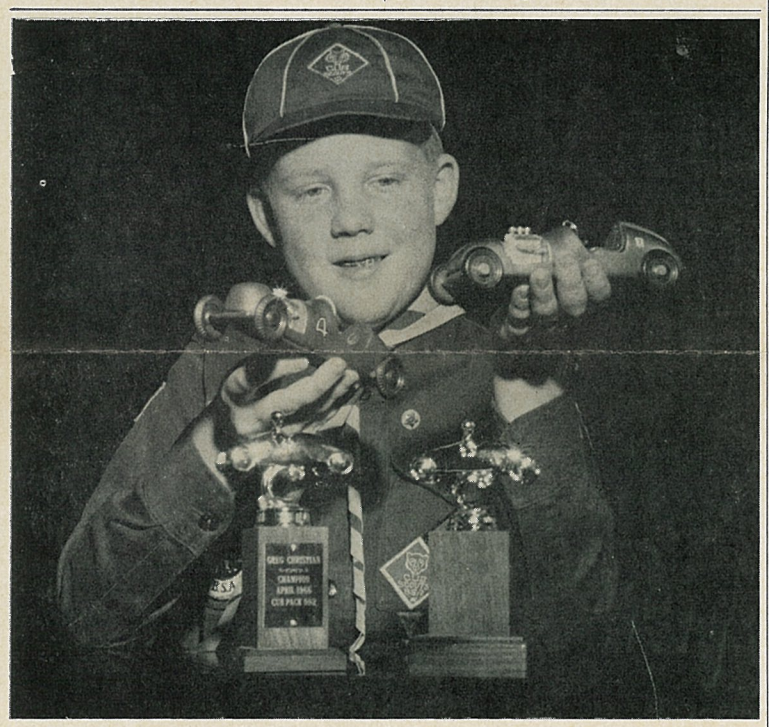
In the first weeks she was there she saw several millionaires, movie stars, celebrities including Charles Lindbergh, James Rockefeller, the Princess of the Wallis Islands, and ships and planes from many nations coming and going at the "crossroads" of the Pacific.

In talking about the Samoan people, Mari says that they enjoy everything—weddings and funerals alike! And they all love to dance. "At a Samoan dance the bands are all of the teen-age type, but everyone of every age attends and dances. You see a 50-year-old couple dancing next to six-year-olds. And they are all excellent dancers."

On the whole the climate has been much like that of San Diego so far—not too warm or humid. But a near hurricane struck last month with six inches of rain along with strong winds in one day, and 15 inches measured in the week.

In spite of South Pacific distractions, Mari is leading the life of a high school girl anywhere—studying algebra, French, English, art, though she finds the school curriculum easier than at home. She works part-time in the school office and takes part in the Island Community Little Theater.

All in all, as Mari says in her new-found Samoan, "tu ai to gata"—it's just too much!



HANDMADE—Greg Christian displays model race cars that have won two championships. He built them both, each carved from a block of wood!

It's All Over Now

'Aging' Speedways Champion Faces Early 'Retirement'

Greg Christian, racing car champion at age 10, must retire this year. He's too old for further competition!

Two-time winner of San Diego Cub Pack 992's annual "Pinewood Derby," Greg will be ineligible to defend his title next year because he'll be a Boy Scout.

Son of Convair's Earl Christian, Dept. 491-0, Greg created both Derby winners by himself (as did the 50 other competing boys), carving them from wood blocks with saw, knife and file. Speed counts more than looks, however, and liberal use of graphite helped the wheels of Greg's entries spin the smoothest during speed runs down the 32-foot inclined track over which the championship was raced.

Building Derby cars is a Cub Scout father-son project, fun for the boys but often frustrating for the parents. They are limited to giving advice!

Mark Your Calendars! Annual Driver TV Test Set For May 23

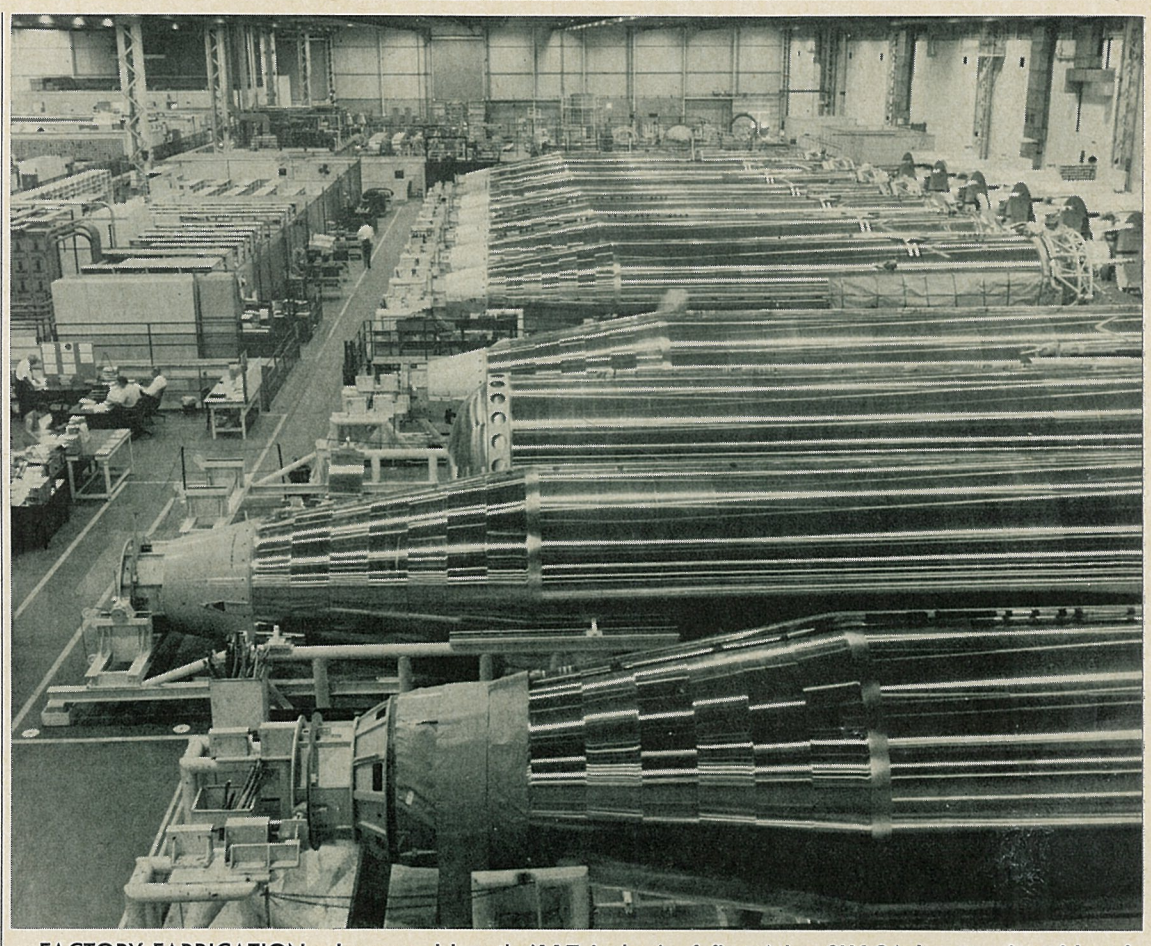
General Dynamics automobile drivers are reminded this week to mark calendars in anticipation of the annual National Drivers Test which will be televised over CBS Tuesday, May 23.

The time will be 10 p.m. in Eastern and Pacific time zones, 9 p.m. in the Central zone and 8 p.m. in Mountain zone.

This is the third year the test has been held. A total of 75 million viewed the first two.

Dramatic new sequences have been developed on winter driving hazards, school buses, motorcycles and special vacation travel hazards. Viewers will test their knowledge and skills in meeting various situations, arrive at their own answers as to what the best technique would be and then have an opportunity to compare their answers with the "right" ones.

Basic driving attitudes and techniques used are practiced by professional fleet drivers belonging to the National Safety Council.



FACTORY FABRICATION—Increased length (117 inches) of first Atlas SLV-3A booster is evident in photo of booster vehicles in final assembly at Convair's Kearny Mesa factory. Also shown are an Atlas SLV-3 (foreground), second Atlas SLV-3C (behind SLV-3A) and Atlas E and F series missiles undergoing refurbishment for new space launch missions.

Corporate-Wide News in Brief

Lunar Orbiter 4, lifted into space by Atlas SLV-3, expected to photograph 90 per cent of moon's surface by time mission is completed.

* * *

Robert V. Laney, Quincy division general manager, and Jack L. Bowers, Convair general manager, appointed vice presidents of General Dynamics.

* * *

Number of in-flight refueling modification units Convair is manufacturing for F-106 interceptors increased to 269 by follow-on contract.

* * *

Contract for kits to install improved tactical air navigation system on F-106s awarded to Convair.

* * *

General Dynamics headquarters personnel honored for support of Greater New York Fund. GD "again at top of manufacturing companies in New York area."

* * *

Convair one of four (others are Grumman, Northrop and McDonnell) to receive four-months study contract from Air Force for preliminary design of A-X close-air-support craft.

* * *

Ten General Dynamics sons and daughters selected for Merit Scholarships financed by the Corporation.

B-58 production aids and tools moving to Waco, Texas, where modification work on SAC B-58s will be performed at James Connally AFB, directed by nucleus of skilled Fort Worth division personnel.

* * *

Air Force signs $1,821,938,561 contract with General Dynamics for 493 F-111s.

* * *

Navy awards $9,560,000 contract to Pomona division for additional research and development of Standard ARM air-to-ground missile.

* * *

Two warships armed by Pomona division missiles (Tartars) commissioned in April. They are USS Talbot and USS Decatur.

* * *

University of Michigan leases Electric Boat's research submarine Star II for studies in Lake Michigan.

* * *

F-111 air hours go over 3,000 mark.

Roger Lewis Reports Net Income Increase

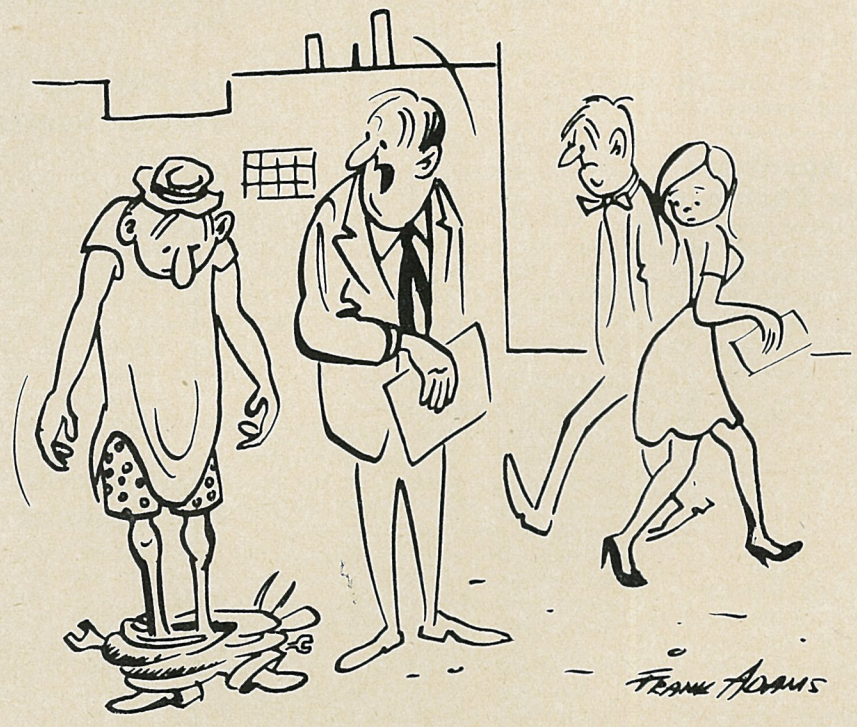
Sales of General Dynamics Corporation for the three months ended March 31, 1967, were $472,056,000, compared with $404,960,000 in the first quarter of 1966, Roger Lewis, president, told stockholders at the annual meeting in Rochester, N. Y., last month.

Net income for the three months ended March 31, 1967, was $10,399,000, equivalent to $1 per common share, compared with $9,255,000, equivalent to 84c per share, in the first quarter of 1966.

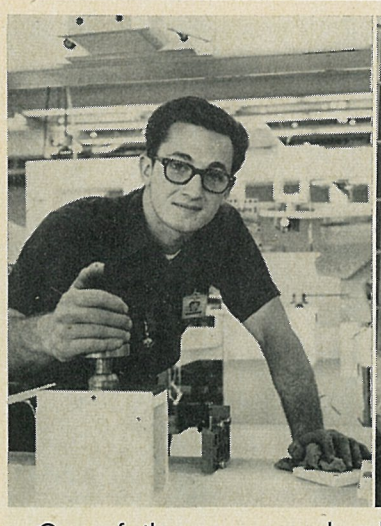
"We expect 1967 to be a good year, at least as good as 1966 and hopefully a little better in both sales and earnings," Lewis said.

All directors nominated were elected. Named to the board for the first time were John F. Floberg, vice president, secretary and general counsel of the Firestone Tire and Rubber Co., and Eric A. Walker, president of Pennsylvania State University.

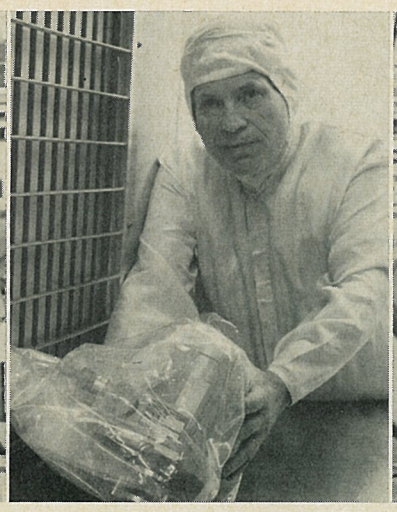
Stockholders approved authorization of a new class of shares, consisting of 1,500,000 shares of preferred stock par value $1 per share.



"I *told* you you'd never get away with it. 'Hip Hugger' pants and all those heavy tools!"



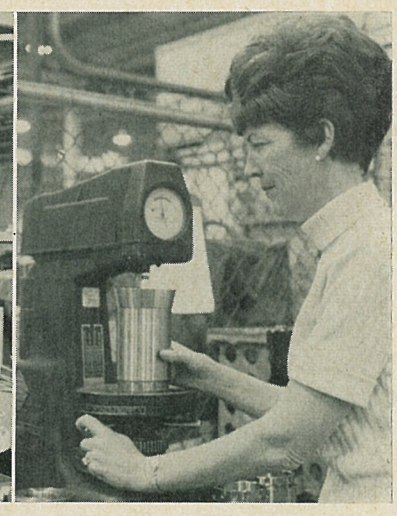
One of the newer members of the Convair family, Joe Sardina is in training as a jig and fixture builder at Lindbergh Field plant. He is shown placing a detail attachment on a F-111 fixture in Bldg. 1. A native of Buffalo, N. Y., Joe was stationed at Ream Field during his four-year stint with the Navy. He liked San Diego so well that he returned to make it his home. He and his wife, Genny, are expecting their first child late this summer.



Anthony P. Johnson, a clean room mechanic in Dept. 733-0 at Kearny Mesa, delivers a Centaur power package assembly through "curtain of air" window in environment-controlled clean room. He assembles various boiloff, fill, and drain valves for launch vehicles. He began with Convair 11½ years ago as a router operator at Plant 19 and has been in the Kearny Mesa factory clean room since it was established seven years ago. The family lives in Pacific Beach.

W. F. "Porky" Heflin, ground support equipment mechanic in Dept. 744-0 at Plant 19, is working on a payload pressurization unit. He began at Convair in 1941, was laid off in 1945 and rehired in field operations in 1947. He transferred to the Model 7 project when it was still in Plant 1's Bldg. 4 and was at the first Atlas firing at the Cape in June, 1957. Later he was one of the Atlas support mobile team sent to the off-site bases when they were activated.

Raquel DiRaffaele is a tube finisher in Lindbergh Field processing department. She burrs ends and fits end nuts onto F-102/106 tubes. She worked for Convair from 1956 to 1961, during the F-102/106 production program at Plant 19. She rejoined the Company last May. A native of Naco, Ariz., she is one of 21 children! However, she and her husband, Filbert, have only one child—14-yr.-old Felix, a student at Wilson Jr. High.



Pat Hunt, a machine parts inspector at Kearny Mesa, uses tester device to check hardness (pounds strength per inch) after heat treat on C-141 main shaft pivot parts for horizontal stabilizer. Pat has been with Convair 17 years. She began with Company as a milling machine operator, has been in inspection 12 years. She lives in La Mesa with her daughter, Sherry Howell, PSA stewardness, and enjoys cooking, horseback riding, dancing.

FORTY YEARS—H. W. (Jimmy) Meyers, second from left, is congratulated by long-time co-workers after receiving 40-yr. service emblem recently. From left: E. H. Damarus, chief of tooling at Lindbergh Field plant; Meyers, asst. foreman in LF tool manufacturing; Division Manager Jack L. Bowers; C. D. Saxon, maintenance assistant foreman; Vern Sharp, general foreman maintenance LF; Norval Jones, general foreman of tool manufacturing LF; and W. E. Stanley, manager of plant engineering. Meyers joined Company at Buffalo, N.Y., April 16, 1927.

Tour Information Meet Set May 31

An information meeting on the coming European tour has been set for Wednesday, May 31, 7:30 p.m., in the CRA auditorium.

A color and sound travel film will be shown and the tour reviewed in detail. A question and answer period will be held and refreshments served. Door prizes will be given, and details announced on how it is possible to win a free trip to Europe.

Two different 22-day package tours are scheduled to leave on Sept. 30. The Grand Tour is $795 per person and the Capital Cities Tour, $859.

Call Inez at ext. 1111 KM for information and reservations.

Hamilton Appointed Convention Chairman

E. A. Hamilton of Convair Dept. 553-2 has been named general chairman for the annual convention of the California Society of Professional Engineers to be held in San Diego, Calif., May, 1968.

Convair men assisting him as committeemen are A. S. Keevil, Dept. 965-1, and W. J. Sevier, Dept. 532-1.

Convention headquarters will be at Vacation Village in Mission Bay Park.

DIRECTORS NAMED FOR ORDNANCE GROUP

New directors of the San Diego Chapter of the American Ordnance Association include J. C. Stowers, General Atomic, past president George Swanson of DCAS at Convair, secretary; I. J. Fansler, Convair, assistant secretary; and R. R. Wahler, Convair.

TOURIST SPANISH COURSE SCHEDULED

A CRA-sponsored Spanish course for tourists will start June 15 in the Convair executive dining room at Lindbergh Field plant.

The course is geared especially for the General Dynamics people planning to join the annual CRA tour to Mexico this summer, Jim Hardison, tour conductor and instructor, said.

Registration will be taken at the first meeting at 7 p.m.

A slide showing of highlights of the Mexican tour will also be shown at the same session.

The course will continue for 8 weeks, 7 to 9 p.m., right up to departure date, Aug. 12.

The course is open to all GD people and their families, free of charge, whether or not they plan to join the Aug. 12-26 trip.

Full information on the summer tour to Mexico City, Acapulco, and other cities, and on the Spanish course may be had by calling Hardison at his home phone 276-5805.

SMITH TO ADDRESS STRESS ANALYSTS

Convair fatigue specialist, Clarence Smith, will speak at the annual spring meeting of the Society for Experimental Stress Analysis this week in Ottawa, Canada. His subjects deals with factors to be considered in predicting cumulative fatigue damage in full-scale structures.

SALES DAY MAY 27

Next employe sales day is Saturday, May 27, at the Lindbergh Field salvage yard, adjacent to Gate 5. Hours are from 8 a.m. until noon. Children are not permitted in the yard.

Research Subs Return to EB

The research submarines Star II and Star III have returned to Electric Boat division of General Dynamics following extended missions off Florida and Nassau.

Star III was on lease to the U. S. Naval Oceanographic Office for four weeks of operations in the Key West area. It then joined Star II for a week's joint operations at Nassau conducted by General Dynamics scientists.

At the conclusion of these operations both vehicles were leased to the New Providence Development Corp. Ltd., Nassau, for a special one-day mission.

The submarines took temperature gradient readings at depths down to 2,000 feet for the firm which is studying the feasibility of building a thermal generating plant off Nassau's Clifton Point.

Both vehicles are being prepared for further operations.

Five From Convair Elected by SAWE

Five Convair men have been elected to offices in the San Diego chapter of the Society of Aeronautical Weight Engineers (SAWE).

They are John W. Richardson, president; Atle U. Schultz, vice president; Charles E. Kohler, secretary; Murray Franke, treasurer; and David L. Johnston, director.

Richardson is employed in aircraft weight control Dept. 588-1 and the others in launch vehicle programs weight control Dept. 986-5.

Doolittle Survivor Convair Specialist

In case you didn't recognize the tall young man second from the right in the April 28 Life Magazine photo of the first Doolittle Raiders reunion, he is Griff Williams of Convair.

The technical publications specialist was a co-pilot on the raid, ditched 500 yards off the China coast and swam ashore.

Of the original 80 survivors of the raid, 55 are living.

Toastmistress Clubs Plan Regional Meet

Mrs. Sunny Dark, management technician with the DCAS plant representative's office at Convair's Kearny Mesa plant, will preside at an International Toastmistress Clubs' Golden Desert Regional Conference Friday through Monday at Kona Kai Club.

She is supervisor of the region, composed of 120 Toastmistress clubs in California, Arizona and Nevada.

Facilities Surveyed and Rated In New 'Clean Plant' Program

Results of the April housekeeping survey of Convair facilities—first under the division's new Clean Plant Program—have been announced by J. P. Hopman, chairman.

Lindbergh Field operations ranked first with the lowest penalty point average of .039. Controller departments were second at .061 and reliability control departments third with .112. Average point standings were determined by dividing number of violation penalty points by number of employes.

Other departments, in order of standing, were operations, industrial relations, military space programs, launch vehicle programs and research and engineering.

The survey was conducted by a division-wide audit and evaluation team with Jack Garrison, chief safety engineer, as chairman.

"We are pleased with the cooperation and are gratified with results to date," Hopman said. "Continued attention to good housekeeping by all employes will result in dramatic improvement of the appearance of plant work areas."

Garrison reported that more than 65 per cent of penalty points assessed were for material taped to walls; dusty files and equipment; thermos bottles, lunches and purses stored in sight, and makeshift storage.

Garrison pointed out that departmental personnel are responsible for frequent dusting of file cabinets, book shelves and office machines and that lunches and other personal items should be kept out of sight in desks, typewriter wells or storage cabinets.

He also emphasized the need for frequent purging of out-of-date reference material, files, tools, supplies and equipment that are no longer needed by the individual or section.

"If we are constantly on guard against accumulation of unneeded material, the problem of makeshift storage should be eliminated," he said.

Janitors at the Kearny Mesa plant have been attending classroom and workshop training sessions for improving job efficiency. Similar training for the janitorial staff at Lindbergh Field and Air Force Plant 19 is scheduled to begin about June 1.

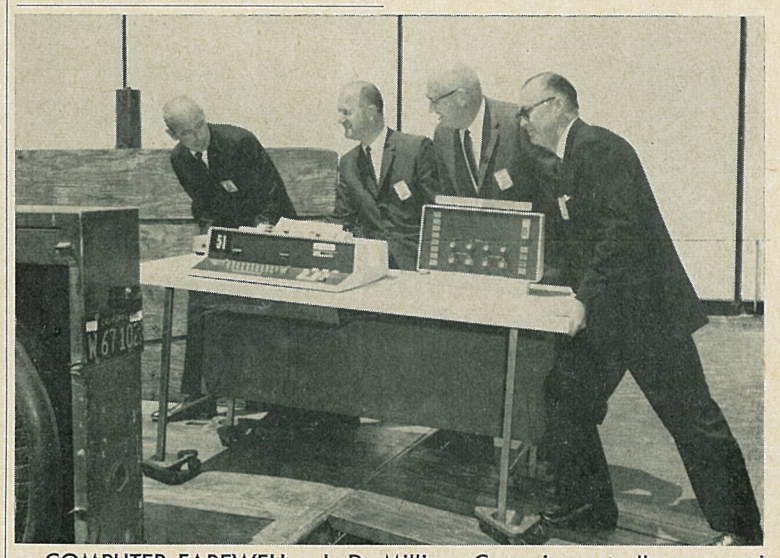
Convair's Computer Capability Upped

Convair's IBM 7074 computer, initially installed in 1961, was dismantled and returned early this month in accordance with a plan initiated 18 months ago to increase the division's computer capabilities while reducing costs.

J. D. Milling, controller, has commended the Convair management systems "team" for its efforts in implementing the plan, under which two separate Company computer systems have been consolidated and business computer programs converted to COBOL (common business oriented language).

D. R. Pardee, manager of management systems, said conversion of all business computer programs to COBOL eliminates need for repeated rewriting of programs as equipment is changed.

"This allows us to take advantage of advanced equipment as it becomes available — thereby reducing cost of computer processing even more," he said.



COMPUTER FAREWELL—J. D. Milling, Convair controller, second from right, is assisted by, left to right, G. R. Jacobs, general supervisor of data processing operations, D. R. Pardee, manager of management systems, and G. O. Withem, chief of data systems, in loading second generation 7074 business computer on truck for return to IBM.

WESTERN CHECKS—Con-Trib-Club checks totaling $2,100 from Convair employes at Vandenberg AFB will be shared by March of Dimes, Tuberculosis and Health Association, Heart Association, Society for Crippled Children and Muscular Dystrophy Association. Messengers for Con-Trib, left to right, are Yvonne Voelker, Ann Tillis, Pat Susee, Donna Jackson, and Ann Cordial.

Eight Outstanding Students Reach Scholarship Finals

Three Convair daughters and five Convair sons are in the running for the annual Convair Management Club scholarships. Top four will receive $500 apiece toward their college expenses.

Finalists are: John William Bohler, son of Robert Bohler, Dept. 544-5; Theresa Caulfield, daughter of James F. Caulfield, Dept. 015-0; David Michael Gardiner, son of Thomas M. Gardiner, Dept. 802-0; Ruth Anne Gjerset, daughter of O. S. Gjerset, Dept. 954-2; Nikki Joyce Perkovich, daughter of N. J. Perkovich, Dept. 002-0; Christopher John Sheldon, son of John G. Sheldon, Dept. 840-2; Robert George Spitzer, son of George R. Spitzer, Dept. 145-1; Michael Alan Van Horne, son of Alan M. Van Horne, Dept. 400-1.

Winners will be determined by a panel of judges after individual interviews next week, May 26.

Serving on the panel are Mrs. A. E. Crom, executive director of the San Diego County Heart Association; Mrs. Frank Curran, wife of Mayor Curran; Wadie P. Deddeh, State Assemblyman, 77th District and former professor at Southwestern College, and Dr. John Huffman, San Diego County Community Educational Resources Executive Director.

Convair members on the panel will be Ross A. Evans, manager of personnel administration; and Dr. N. W. Lamb, market analysis and planning project administrator.

Con-Trib Will Finance Camping Vacations

Sixth-graders in San Diego County schools will get a camping experience this summer by courtesy of the Convair Employes' Con-Trib-Club.

The Con-Trib committee has approved $835 for camperships from seven school districts. Chula Vista City School District will receive $150; La Mesa Spring Valley School District, $100; Lemon Grove, $35; National City, $50; Poway Unified School District, $50; San Diego City School Central Campership Fund, $400; and Solana Beach, $50.

Other bequests granted at the May 5 meeting included $1,500 to Mercy Hospital's Outpatient Clinic to be applied toward purchase of equipment for the eye clinic. Boy Scouts of America—San Diego County Council receives $1,000 for its membership program. Southeast Branch YMCA will get $750 to be applied toward the swimming pool building fund.

Vandenberg AFB advisory committee recommended donations of $750 to the American Cancer Society and $200 to the California Elks Major Project, Inc.

Savings, Stock Plan 'Open' Until May 31

General Dynamics employes interested in joining and those wishing to change their participation in the Company's Savings and Stock Investment Plan face a May 31 deadline.

Employes not presently members of the Plan, or those just establishing their eligibility, have until that date to join.

Participating employes have until the end of this month to make changes in investment options or percentages of savings for the quarter starting July 1. Such changes are only accepted one month before the start of each quarter.

Forms and prospectuses describing the Plan are available at employe services outlets.

Symposium on Data Processing Slated

A data processing technical symposium will be sponsored by the San Diego Council of Data Processing Societies from 9 a.m. to 4 p.m. May 26 at the Community Concourse.

C. H. Gutzler of Convair's Dept. 591-0 is arrangements chairman and J. R. Logan of Dept. 591-0 and W. H. McIntosh of Dept. 595-0 are members. W. J. Schart and H. W. Buckner, both of Dept. 959-0, will introduce speakers.

Few Tickets Left For Baseball Trip

A few tickets are still on hand for the CRA-sponsored bus trip to see the Angels and Twins baseball game in Los Angeles this coming Sunday, May 21.

Today is the last day to buy tickets. Call CRA Clubhouse, ext. 1111, or Lindbergh Field employe services, ext. 430. Some tickets may still be held over for another day, however, said Pete Beyrer of CRA.

Cost of transportation and admission is $5.25.

LENSMAN TO MEET IN BALBOA PARK

Camera Club members will meet next Sunday, May 21, for their second quarterly contest. Meeting will be at 8 p.m. in Balboa Park's Photo Arts Bldg. The CRA group will drive to Pala Mission the following Sunday, May 28, to shoot pictures during the mission's annual Fiesta.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111, Kearny Mesa. Deadline for next issue of GD/NEWS is May 23. Call ext. 1071 LF, or 3322 KM.)

* * *

ADVENTURERS—Nature slide showing tonight (May 17) 8 p.m., CRA auditorium. Public invited. Two-day backpack hike, Mt. San Jacinto, May 20-21. Call Dick Bowen, 278-9846.

ARCHERY—Shoot this Sunday, May 21, 1 p.m., CRA range.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BOWLING — Summer leagues began play this month. For late entries call CRA Headquarters, ext. 1111 KM.

BRIDGE — Play each Friday, 7:30 p.m., CRA Clubhouse.

CAMERA CLUB — Quarterly contest May 21, 8 p.m., Photo Arts Bldg., Balboa Park. Field trip to Pala Mission Fiesta May 28.

CERAMICS—Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS — Meeting tonight (May 17), 7:30 p.m., Convair cafeteria, Lindbergh Field.

CONVAIRIDERS — Ride to Cardiff Saturday, May 20. Meet at 8 a.m. at flagpole, Kearny Mesa.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GOLF—Sign up until May 26 for CRA tourney, Chula Vista course, June 3-4.

ICE SKATING—GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

JUNIOR SCIENCE—Meeting May 19, 7:30 p.m., CRA Clubhouse.

PISTOL CLUB—Shoot May 28, 9:15 a.m., SD Police Pistol Range, Home Ave. & Federal Blvd.

RADIO—Meeting May 18, 7:30 p.m., CRA Clubhouse.

RIDING CLUB—Fun Show May 21, 8 a.m., CRA Horse Ring. Family outing to Frontier Town May 30.

RIFLE—Junior shoot May 20, 1 p.m., Gillespie Field Range.

ROAD RUNNERS—Meeting May 25, 7:30 p.m., Gillespie Field Clubhouse.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB—Annual awards banquet June 3, Catamaran Hotel. Trip to Mammoth May 27-28. Call Robin Bithell, 296-6098. Water skiing Thursdays, 5:30 p.m., Saturdays and Sundays, 9 a.m., Crown Point. Call Harry Eastman, 274-4982.

SWIMMING—Family swim night May 20, 7-9 p.m., Mission Bay Plunge. Free tickets at employe services outlets.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m., Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse. Dynamics club's 15th anniversary dinner May 24, Stardust Motor Hotel.

TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

WIVES — Membership tea May 24, 1-3 p.m., CRA Clubhouse. All Convair wives welcome.

Linksmen to Tour Chula Vista Links

Next month's CRA links tournament is scheduled June 3 and 4 at the Chula Vista golf course. Starting times may be reserved by phoning ext. 1111 KM tomorrow through May 26.

Leo Slosser and Marlene Kohler Win All-Events in Championship

Leo Slosser and Marlene Kohler emerged as all-event winners of the 26th annual CRA plant bowling championships held the last two weeks in April.

Slosser had a total of 1,976 pins. Mrs. Kohler piled up 1,746.

Around 300 keglers competed in the yearly competition at Pacific Recreation.

Men's team champs were Tom Sacco, Ralph Avitable, John Arena, Jerry Ryan, Forest Erwin with a score of 3,153.

Top mixed team members were Evelyn and Willis Carson, Frances and Mike Brooks, and John Adams. Team score was 2,886.

Winning men's doubles of Alex Kuhnel and John Adams rolled a 1,312, just 8 pins more than the pair of Mike Brooks and Willis Carson, bowling on the same alley.

Ann and Hal Heist won the mixed doubles event with 1,280 total pins. Women's doubles honors went to Kelsie Brown and Evelyn Carson with a score of 1,141.

Slosser was men's singles winner with 745 total pins and Barbara Graves was women's singles champ with 598.

George Lang had high game of the tourney with a 267.

Award presentation was last Sunday evening at a banquet at Clairemont Bowl.

Hike up Mountain Set For Weekend

Next outing for CRA Adventurers will be a two-day backpack hike up Mt. San Jacinto from the Palm Springs Aerial Tramway this coming weekend, May 20-21.

Hikers will meet Saturday morning at 8:30 a.m. at the Valley Station parking area of the Tramway at the north side of Palm Springs, west of Highway 111.

They will ride the tram as far as it goes, then hike to scenic vantage points in the area on Saturday and up Mt. San Jacinto to the peak on Sunday. People who can join the outing for only one day are invited to plan on the Saturday excursion.

Everyone is reminded to bring extra warm clothes, lunch, canteen of water, sunburn lotion, and camera. Backpackers will need, in addition, sleeping bags, lightweight stove or some source of heat to warm food. There is little wood in the area.

Commissioner Dick Bowen and Larry Lesh are trip leaders. Call Bowen at his home phone, 278-9846, for information.

CRA Skiers Runner-up In Mammoth Slalom

San Diego Ski Club finished the half-mile giant slalom course at Mammoth Mt. ahead of the three other teams competing in the annual Convair Ski Club races to win the championship team event.

Convair Ski Club was runner-up and Don Diego Ski Club, third.

Joe Harris, CRA commissioner, crossed the line ahead of the field to win the men's event in the Convair Club Race. Second was Matt Nilson and Robin Young of General Atomic, third.

Helen Navoy won the women's event.

Trophies will be presented at the annual awards banquet June 3 at Catamaran Hotel.

Another CIA ski trip will be sponsored to Mammoth the end of this month, over the weekend of May 27-28, if enough sign. Robin Bithell is taking reservations at 296-6098.

'Amos and Andy' Heard By Hi-Fi Members

CRA Hi-Fi Club members heard early-day sound transmission reproductions dating back to Alexander Graham Bell's first transmission in 1876 at their May 9 meeting.

Nostalgia prevailed as members listened to radio show recordings of "Amos and Andy" and "Jack Armstrong—the All-American Boy" and heard Herbert Morrison's eye-witness account of the Hindenburg tragedy on May 6, 1937.

The historical recordings were presented by Charles Hunsacre of the Pacific Telephone Co. marketing department.

Minter Will Lead Cardiff Bike Ride

Convairiders with 10-speed bicycles will make a 50-mile ride to Cardiff Saturday (May 20), leaving the flagpole at Kearny Mesa at 8 a.m.

Fred Minter is leader and the ride will be along U.S. Highway 395, Miramar Road and U.S. Highway 101.

Eighteen made the 25-mile Rancho Santa Fe circuit May 6. John A. Hughes was awarded a club jersey for completion of 200 miles on club-sponsored rides.

Water Ski Sessions Now Three a Week

Water skiers are now meeting for three skiing sessions a week as warmer weather heats bay waters. Group skiing is held Thursday afternoons at 5:30 p.m. and on weekends, Saturday and Sunday mornings at 9 a.m., at Crown Point. Two CRA boats are in action at all times to tow skiers. Skiers planning to go skiing are asked to call Harry Eastman, 274-4982, so that he will have an idea of how many to plan on.

June 1 Is Deadline For Ticket Drawing

Baseball fans have until the first of the month to enter their names for the CRA baseball drawing for free tickets to Padres home games in June.

Entry slips, limited to one per person, must be deposited in boxes at employe services outlets by June 1. The drawing will be held June 2.

Slips must include employe's name, division, plant, department number, shift, and plant phone extension.

Boxes are at Convair, Stromberg-Carlson, and Electronics-SD employe services outlets, Lindbergh Field engineering mailroom, Bldg. 51, third floor; H. C. Medearis' office at AF Plant 19; and the CRA Clubhouse.

Convair Horsemen Plan Special Events

Convair horsemen have two special events coming up — an open fun horse show this coming Sunday (May 21) and a family outing to Frontier Town on Memorial Day.

The Sunday fun show will feature gymkhana events in the morning, starting at 8:30 a.m., and "gunzel" contests — just for laughs — in the afternoon. Entry fee is 25 cents an event for members, 50 cents for non-members.

Riding Club families will meet, minus their horses, at 9 a.m. in the CRA recreation area on Tuesday, May 30, to travel in a caravan to the Frontier Town amusement site east of San Diego. Everyone is urged to wear his Western garb for the all-day affair.

WIVES PLANNING MEMBERSHIP TEA

Convair Wives' Club has scheduled a membership tea from 1 to 3 p.m. May 24 in CRA Clubhouse. Club officers and board members will serve as hostesses. Past presidents will preside at the tea table.

Wives of all Convair employes and subcontractors are urged to attend.

Bargain Tickets

(Following are bargain-rate tickets currently available to employes. Unless otherwise stated, they are offered at employe services offices of Convair, Stromberg-Carlson, Electronics-SD, Bldg. 51 engineering mailroom, Lindbergh Field, H. C. Medearis' office at AF Plant 19, and CRA Clubhouse.)

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Starlight Civic Light Opera advance tickets for "Finian's Rainbow" July 8, "Oliver" Aug. 12 and "Gypsy" Sept. 2 are on sale at $3.50 each ($1 saving) at KM and LF employe services offices only. Each performance is at 8:30 p.m. at Civic Theatre.

* * *

San Diego County Fair, June 23-July 4, Del Mar; tickets $1 for adults (25 cent saving) and 25 cents for children (no discount). Proceeds benefit San Diego Children's Dental Health Center.

* * *

Sea World discount coupons available for reduced admission of $2.25 for adults (50 cent saving), $1.50 for juniors (13 through 17 years) and 75 cents for children (5 through 12 years).

Slide Show Planned For Adventurers

Adventurers and their friends will gather tonight (May 17) in the CRA auditorium to see a new color slide showing prepared by Larry and Edith Tuttle. Program will start at 8 p.m.

The hour-long presentation, "Looking Up and Looking Down," is composed of nature shots, highlighting birds and flowers along the trail.

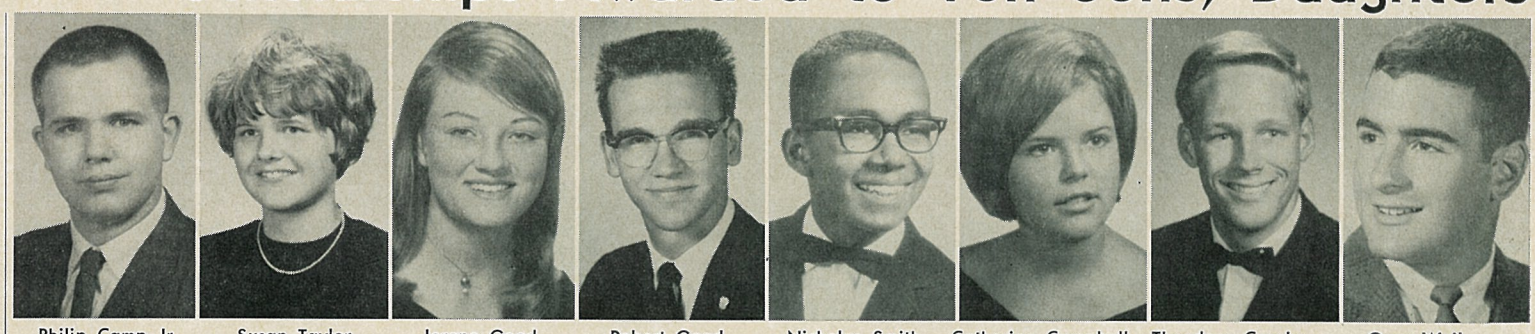
Refreshments will be served and a door prize given. The public is invited free of charge.

General Dynamics Scholarships Awarded to Ten Sons, Daughters

Three General Dynamics daughters and seven sons have qualified for Merit Scholarships financed by General Dynamics Corporation.

All are high school seniors and will enter college this fall, and all have had distinguished high school careers both academically and in school affairs.

The scholarships, awarded annually to children of GD employes, are part of the Corporation's broad aid to education program. This includes other merit scholarships, fellowships, teaching aids and financial gifts to educational institutions throughout the United States and Canada.



Philip Camp Jr. | Susan Taylor | Jerene Good | Robert Goad | Nicholas Smith | Catherine Campbell | Theodore Crooks | Gary Weil

Two qualified from the Electric Boat division area, Susan E. Taylor, daughter of Mr. and Mrs. Frederick W. Taylor of New London, and Philip L. Camp Jr., son of Mr. and Mrs. Philip Camp Sr. of Stonington, Conn. Susan intends to major in philosophy at Swarthmore College and Philip will major in physics at Williams College.

From the San Diego area (Convair) are Nicholas D. Smith, son of Mr. and Mrs. Harold D. Smith, and Catherine Jean Campbell, daughter of Mr. and Mrs. Sterling A. Campbell. Nicholas will major in chemistry at California Institute of Technology and Catherine has chosen a philosophy major at University of California-Riverside.

A Fort Worth division son is Robert E. Goad, whose parents are Mr. and Mrs. C. C. Goad, Hurst, Texas. He will major in mathematics at Rice University.

Stromberg-Carlson's representative is Paul F. Jones, son of Mr. and Mrs. Roy W. Jones of Rochester who plans a physics major at University of Notre Dame.

At Quincy division the scholarship winner is Thomas J. Vaughn Jr., son of Mr. and Mrs. Thomas J. Vaughn, Dorchester, Mass., who will major in mechanical engineering at Northeastern University.

Theodore J. Crooks, son of Mr. and Mrs. James W. Crooks Jr. (Electronics-San Diego) will enter Stanford University but as yet is undecided on a major.

Material Service division's scholar is Gary J. Weil, son of Mr. and Mrs. Byron S. Weil of Northbrook, Ill. He will major in chemistry at Harvard University and plans a career in medicine.

Representing Pomona division is Jerene Good, daughter of Mr. and Mrs. Elden H. Good of Pomona. She will enter University of the Pacific but has not yet chosen a major.

Space Launches Earn Customer 'Well Done'

Convair division has been commended by Maj. Gen. Paul T. Cooper, commander of Air Force Space Systems Division, for efforts in successful launch of the third PRIME SV-5D vehicle last month from Vandenberg AFB.

Cooper, in a telegram to Jack L. Bowers, Convair general manager, said:

"Congratulations on another highly successful launch of the PRIME vehicle. The extraordinary efforts by your project personnel in accomplishing very complex tasks in a critically short time are highly commendable.

"Please extend my appreciation to all of your project personnel who made this historic flight such an outstanding success."

Launch of the PRIME (Precision Recovery Including Maneuvering Entry) vehicle by Convair's Atlas SLV-3 No. 7003 marked the 28th consecutive successful Atlas launch and a continuation of the perfect launch record for the PRIME project. Ray Degn, assistant site manager, was launch conductor.

Convair also provides the shroud and interstage adapter for PRIME.

The third PRIME vehicle was recovered by the Air Force after its maneuvering flight down the Western Test Range and returned to the Martin Co. in Baltimore, Md., for post-flight systems tests.

Howard M. Bonesteel, Convair PRIME program manager, and James L. Minos of the program office were in Baltimore last week for a briefing on mission results.

Convair's Atlas SLV-3 No. 7004 has been erected at Vandenberg in preparation for the fourth PRIME launch.

Bonesteel said Convair will receive $119,444 incentive bonus for interstage adapter, shroud and guidance operations if the fourth flight is successful—in addition to possible launch vehicle reliability incentive covered under separate contract.

★ ★ ★

Convair division continues to receive congratulations on the flawless performance of Atlas-Centaur 12 in sending Surveyor 3 to the moon.

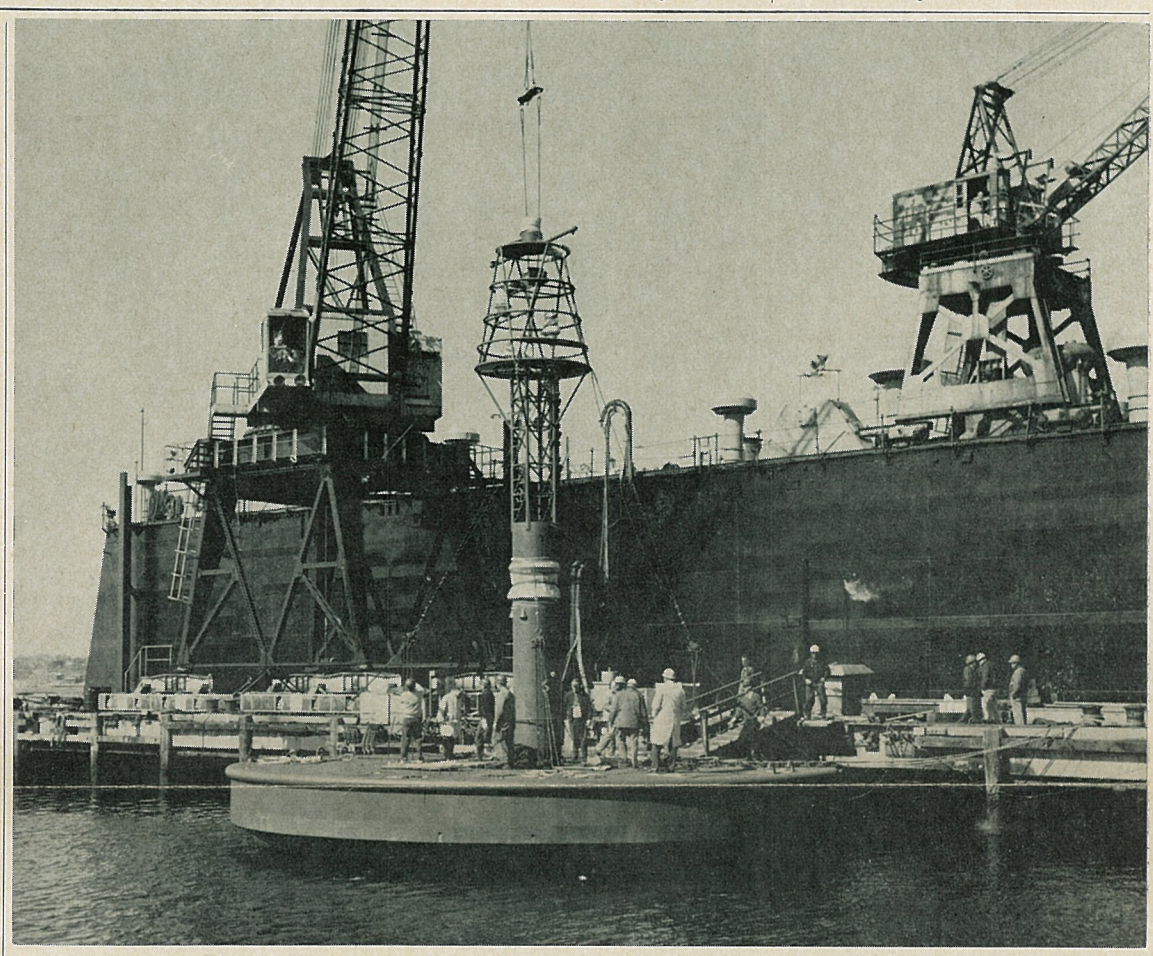
Grant L. Hansen, vice president-launch vehicle programs, received the following letter from Dr. Homer E. Newell, associate administrator for space science and applications at NASA headquarters in Washington:

"I should like to extend my heartiest congratulations to you and the Centaur team for their sterling performance on the Surveyor III mission.

"As you know, AC-12's injection accuracy was so precise that a midcourse correction of only about 4 meters per second (roughly 10 per cent of the Surveyor's midcourse capability) was required. This excellent performance is even more remarkable when one considers that this was the first operational use of the two-burn Centaur in a parking-orbit mode.

"Please convey my thanks to all members of the Centaur team for their contribution to the Surveyor III success."

Surveyor 3 took more than 6,000 photographs of the moon's surface before being "shut down" for the two-week lunar night.



MAST RAISING—Electric Boat workmen mate 33-ft. high superstructure (built at Convair) to hull for U.S. Coast Guard navigation buoy late last month at Groton, Conn. Gordon Brickson, back to camera wearing light raincoat, is Convair liaison engineer during installation of electronic equipment in buoy.

Lunar Orbiter 4 Scheduled to Take Photos of 90 Pct. of Moon Surface

Lunar Orbiter 4, lifted into space May 4 by "perfect performance" of Convair's Atlas SLV-3 No. 5804, is expected to photograph more than 90 per cent of the lunar surface by the time it completes its photographic mission about May 28.

Photos being returned of the front side of the moon are of sufficient resolution to show surface features 200 feet across. Those of the hidden side picture objects 400 feet across and larger.

Jim Von de Wische, Convair program manager for NASA SLV-3 programs, said the Atlas booster's separation velocity was within ½-foot per second of that desired.

With Von der Wische at the Cape for the liftoff from Complex 13 were Grant L. Hansen, vice president-launch vehicle programs, and Richard W. Keehn, Atlas SLV program office manager.

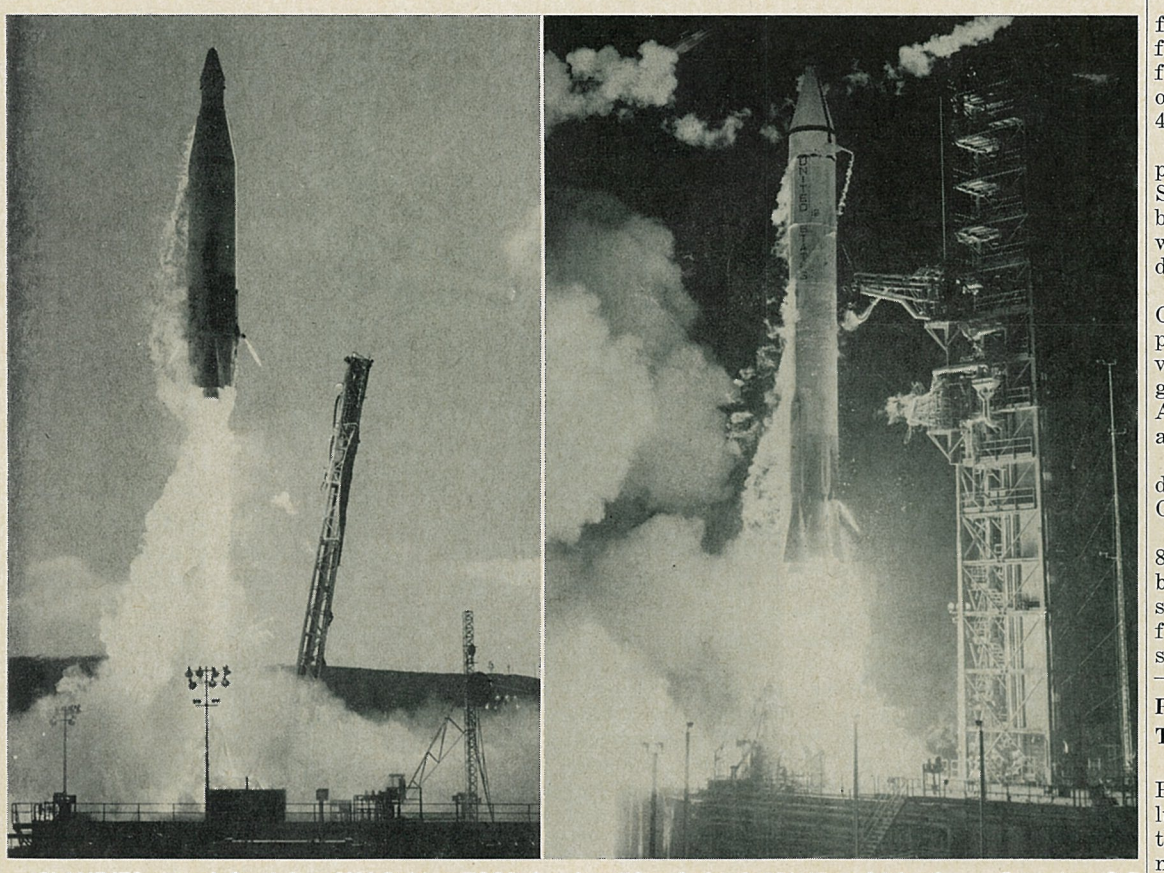
W. G. Phillipp was launch conductor with W. E. Apfel and G. G. Baxter as assistants.

Orbiter 4 was released for its 89-hour transit following two burns of the Agena D second-stage vehicle. Retroengines were fired 2,350 miles from the lunar surface to enable "capture" of the spacecraft by the moon's gravitational field.

The Orbiter is circling the moon every 12 hours from its near-polar orbit with apolune altitude of 3,789 miles and perilune of 1,677 miles.

Like its predecessors, it is also monitoring proton radiation and meteoroids in the vicinity of the moon. Detection equipment on the three previous spacecraft have recorded five meteoroid punctures.

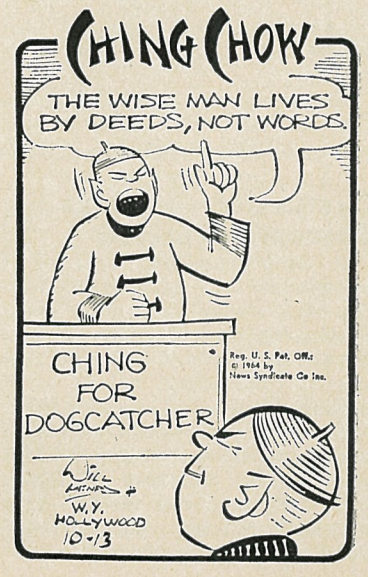
Successful flight of the Atlas booster marked the 29th consecutive successful Atlas space launch. It was the 78th success in the last 81 launches.



PLAUDITS—At left, Atlas SLV-3 No. 7003 begins lift of third PRIME vehicle from Complex 3-E at Vandenberg AFB, Calif. At right, Atlas-Centaur 12 lifts off Complex 36B at Eastern Test Range, Fla., sending Surveyor 3 to moon. Both have drawn commendations.

POMONA SUPERVISOR TO DELIVER TALK

D. C. Tubbs, supervisor of Pomona division's publication illustrations section, will speak at the International Technical Communication Conference sponsored by the Society of Technical Writers and Publishers in Chicago May 24-27.



Convair Receives $3.8 Million Incentive Fee For Flight Reliability

Convair division has received a $3.8 million maximum incentive fee from Air Force Space Systems Division for exceeding 90 per cent flight reliability and countdown performance under a contract awarded in 1962 for production and launch of 35 Atlas SLV-3s.

The boosters were used for launch of NASA Project Gemini rendezvous and docking targets and for various Air Force missions.

At the end of the contract period in January, Atlas flight performance reliability was 93.75 per cent and countdown performance reliability 94.29 per cent.

Flight performance was based on the SLV-3s placing second-stage vehicles into prescribed trajectories at specified velocities. Countdown performance required pre-flight activities to proceed without delays attributable to Convair.

The incentive award was presented to Convair officials recently by Col. Leo W. Sullivan, SLV-3 program director for SSD, and Col. J. L. Hamilton, SSD deputy for launch vehicles.

Jack L. Bowers, general manager, said the award demonstrates Convair's ability to produce complex space systems hardware under some of the most stringent conditions yet accepted by the aerospace industry.

"Not only did we meet the conditions on this contract, we exceeded them," he said. "So far on the follow-on contract, which calls for 100 per cent flight reliability, our record is perfect.

"As the nation moves ahead in its space program, I expect that more and more contracts will

(Continued on Page 2)

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 11 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, May 31, 1967

RECOGNITION—Ray Lange, Convair supervisor of material sales (right foreground), is congratulated by Convair General Manager Jack L. Bowers at presentation of Certificate of Commendation recognizing his efforts on new method of handling aluminum turnings and borings. Others from left are Robert M. Smith, manager of employe relations and employment; Lyle Wood, manager of material operations; E. D. Heller, manager of cost reduction and value engineering; H. E. Moose, director of material; and E. D. Bryant, vice president-operations.

Sub-Assembly Begun On C-5 Empennages

Components for the first C-5 part now are in sub-assembly at Convair as the division heads into production of empennages for the Air Force cargo jet.

Convair will build 60 C-5 empennages under a subcontract from Lockheed-Georgia Co., prime contractor.

Delivery date of the first empennage on dock at Lockheed's Marietta, Ga., plant, is Oct. 4, R. W. Miller, C-5 program manager said. The first C-5 will be rolled out in February, 1968, and test-flown next June.

Major structural assembly of the main empennage components will probably start around the first of July in the main assembly area in the center part of Bldg. 2 at Lindbergh Field plant.

Rudder and elevator assembly will be done in the east bay area and on the east mezzanine of Bldg. 3.

Tooling for detail tools and fixtures is now 78 per cent complete and expected to be entirely finished by the middle of July.

Proofing of control, hydraulics, electrical, and avionics systems on the systems proofing article in Bldg. 4 should be virtually completed by the end of June.

E. D. Robinson is in charge of C-5 assembly operations as general foreman. Assistant foremen reporting to him, and their responsibilities, are James Ames, horizontal stabilizer; E. E. Miller, vertical stabilizer; Jack Benedict, horizontal stabilizer box; B. T. McMicken, fore and aft bullet.

Silver Anniversary Tickets Going Fast

Tickets are going fast for the Convair Management Club's silver anniversary meeting June 8, Club President Larry Sweeney warns.

Seating capacity of the International Room, El Cortez Hotel, is limited to 1,100, so tickets to the dinner should be purchased as early as possible, he said.

J. B. Waskey, first president of the original Consolidated Foremen's Club, will be at the anniversary observance as will James Kelley, Consolidated manager at the time the group was formed 25 years ago.

Convair Inaugurates Scrap Conversion Plan

Convair division will recover about $1½ million over the next five years by a new procedure of handling aluminum scrap metal from the division's milling operations.

The overall project has been named Operation INGOT for "Increased Net Gain On Turnings."

Under the program, Convair has signed an agreement with a Los Angeles smelting company for conversion of all aluminum turnings and borings into ingots for resale by the division.

Until now the metal has been sold outright by bids on two or three carload lots, in baled condition. However, the vast increase in the amount of metal anticipated in the division's large aerospace programs made a change of procedure imperative from a standpoint of storage and handling. And, the division is gaining a strict dollar advantage in the change-over, H. E. Moose, director of material for Convair, pointed out.

Under the recently-signed contract with Aaron Ferer and Sons, Inc., a subsidiary of Whittaker Corp. of Los Angeles, the servicer will pick up the metal in loose condition, transport it to the smelter, and convert it to assayed ingots, chemically analyzed for exact contents.

The ingots, 20 to 50 lbs. in weight, will be stamped "Convair" and stored until Convair directs their sale. As ingots, the aluminum brings at least three times more per pound than metal in baled condition.

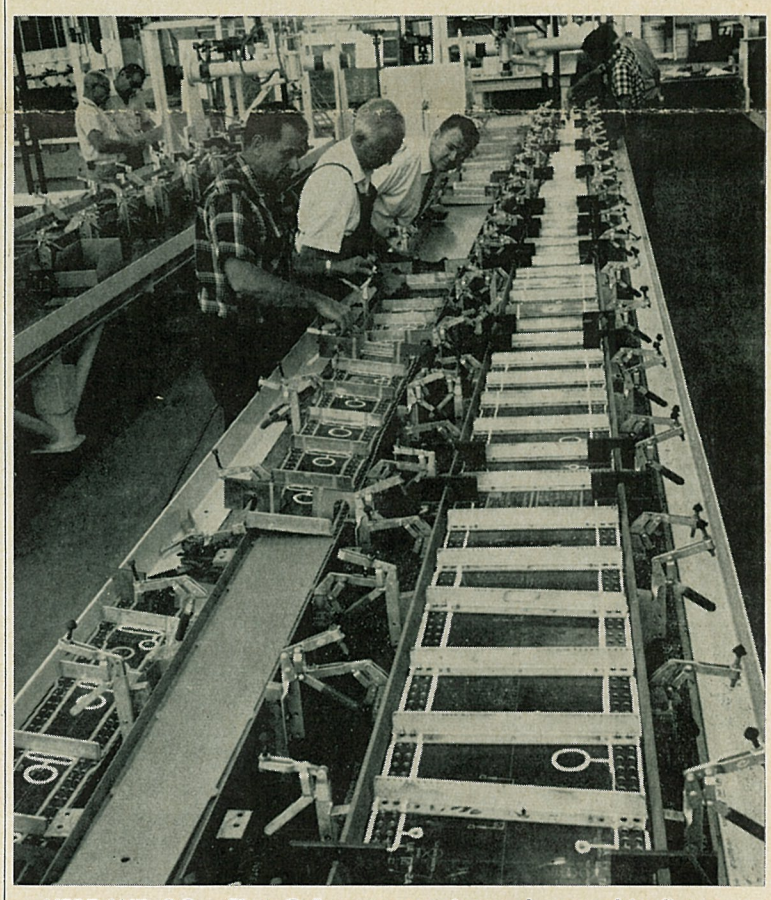
Ray Lange, Convair supervisor of material sales, who was responsible for initiating the new procedure, said that groundwork for the change in handling was laid almost a year ago.

Since then Lange has worked closely with the local handler, Robert Deane, president of Aaron Ferer and Sons, San Diego dealer, and William Teller, president of Aaron Ferer smelting company in Los Angeles, to effect the present arrangement.

"We foresaw difficulties in handling the tremendous quantities of turnings and borings which must be disposed of during coming production of C-5 and F-111 components," Lange said.

By the most conservative estimates, over 22 million pounds of aluminum scrap metal will pour through the division in the next

(Continued on Page 3)



HERE WE GO—First C-5 part goes into sub-assembly fixture as Convair begins actual production operations on empennages for huge Air Force cargo jet. Ivan Howarter, leadman, and Earl Gatlin, assembler, fit horizontal front beam assembly in fixture under supervision of James Ames, horizontal stabilizer assistant foreman.

ORBITER SHOT—Lunar Orbiter 4 (launched by Atlas SLV-3 No. 5804) took this photo of moon's surface from 32.8 mile altitude.

Vice President Humphrey Praises Convair's Role in Surveyor 3

Vice President Hubert H. Humphrey has praised Convair division directly for its role in success of the Surveyor 3 mission.

In a letter to Grant L. Hansen, vice president-launch vehicle programs, the vice president said:

"As chairman of the National Aeronautics and Space Council, I extend my personal congratulations to you and your fine associates for the part you played in the success of Surveyor III.

"I have seen several of the first photographs and was amazed at the results. I know that Surveyor III was successful because of the assistance rendered by you and your personnel.

"The pictures with Venus in the background and the fine detailed photographs of our first

(Continued on Page 2)

Arch Rambeau Elected Mgt. Club's President

Arch Rambeau won the election for president of the Convair Management Club for the coming 1967-68 term by a close margin over Mike Bickers.

Others voted into office last month were: J. M. Farrar (780-0), first vice president; A. R. Mosco (195-3), second vice president; H. B. Day (123-0), recording secretary; B. J. Neal (194-0), financial secretary; J. L. Mumford (953-0), treasurer.

New directors elected for the three-year term are Lyle Wood (840-0) and J. E. Cook (957-0). Two-year board directors are S. W. Swenson (511-1) and A. H. Gross (115-0). Elected for a one-year term are W. F. Chana (591-3), R. M. Mitchell (964-4), and John Tannone (130-9).

They will join hold-over directors R. L. Peck, L. H. Allen, and Don Anderson. M. L. Sweeney, outgoing president, also will be a member of the board.

John Patton of Ryan Aeronautical Corp. and National Management Association director, will install officers on June 19 at a dinner meeting at Cafe Del Rey Moro, Balboa Park.

The meeting will be a new member indoctrination open to all club members.

Log Book Entries

Service Emblems

CONVAIR

Service emblems awarded between May 15 and May 31.

Thirty-five-year: Dept. 710, J. M. Kline.

Thirty-year: Dept. 020, L. P. Smith; 761, D. L. Kimball.

Twenty-five-year: Dept. 001, K. J. Walker; 400, C. L. Seybold; 506, W. T. Dorrance; 731, O. O. Lepper, 758, C. P. Hansen; 860 E. Haberkamp.

Twenty-year: Dept. 041, M. Richardson; 101, L. G. Schmidt; 130, A. C. Gates; 201, G. M. Barker; 460, Adeline, J Lowe; 545, H. A. Lawrence; 732, M. R. Burns; 733, Mildred M. Lloyd; 744, J. K. Laursen; 761, H. R. Short; 780, E. R. Cooper, B. G. Farrar, J. E. Woolford; 840, Louise R. Rankin; 961, W. H. Hill.

Fifteen-year: Dept. 001, C. A. Braithwaite; 059, F. Aguero; 101, Doris R. Hawkesworth; 113, F. J. Kennie; 142, J. P. Flatley; 191, P. R. Grokoest; 195, W. Du Moulin, J. E. Pate, W. A. Wells; 250, L. L. Horton; 400, Georgette D. Rankin; 401, W. E. Daenzer; 521, L. P. Wallace; 756, C. M. Jayne; 834, E. C. Dell; 840, D. M. Chappel; 842, P. C. Tubach; 985, R. W. Johnstone.

Ten-year: Dept. 001, R. J. Zabinski; 019, O. Mitchell; 059, R. C. Overy; 101, Alice M. Donovan; 102, C. D. Curriden; 130, J. Maul; 142, N. B. E. Forsberg, D. E. Plunket, R. F. Reutlinger; 144, W. J. Kruse; 250, J. S. DiGioia, E. Gray, M. Terrell; 401, R. M. Harrington, C. F. Kahler; 460, O. J. Herold; 518, L. B. Rivera; 521, Mary E. Taylor; 532, W. L. Eckhart; 533, L. S. Davis; 541, R. D. Adkins; 585, J. G. R. Collette; 587, M. G. Herbert; 591, Dorothy N. Benson; 756, J. F. Echeandia, E. E. Taylor; 763, G. G. Edner; 780, G. D. Gerndt, I. H. Thesman; 831, H. D. Yocum; 832, H. J. Cormier; 836, K. Blair; 842, J. E. Arnold; 951, M. L. Male; 954, R. Peters; 967, R. D. Lytwyn; 979, R. R. Cason, J. W. Dutcher Jr., G. J. Kadlec, J. K. Moore, J. E. Plinneke, M. C. Roberts; 985, W. H. Denny, L. C. Vandborg, J. F. Wells.

ELECTRONICS

Fifteen-year: Dept. 422, D. W. Bryant, H. D. Simpson; 423, Helen S. Cupp, Alma V. Licht.

Ten-year: Dept. 416, LaVerne M. Lacy; 614, A. W. Martens; 713, V. G. Vassilou.

STROMBERG-CARLSON

Ten-year: Dept. 85-10, L. Hammond.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Monday, June 5; 4:30 p.m., Wednesday, June 7; 8 a.m., Monday, June 19. Lindbergh Field, ext. 491, Bldg. 14 auditorium, 8 a.m. Tuesday, June 6; 8 a.m. and 4:30 p.m., Tuesday, June 20. AF Plant 19, ext. 491 LF, Bldg. 3 Conference Room, 8 a.m., Friday, June 23.

PROFESSIONAL/TECHNICAL

FORTRAN IV—40 hr. course on Basic FORTRAN IV. Starts June 13. 4:30-6:30 p.m., Tuesdays and Thursdays, Lindbergh Field plant. For reservations and information call Dick Forrest, educational services, ext. 1931, Kearny Mesa.

PROGRAMMED SELF STUDY—A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931, Kearny Mesa.

U. OF CALIFORNIA EXTENSION

Individuals participating in the current University of California Extension certificate program for professional designation and senior award in Business Systems Management please contact Don Olsen, educational services, ext. 1931, Kearny Mesa.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending May 12.

Dept. 015-0, F. E. Slayton; 031-0, W. F. Hindes, E. F. Quinn; 130-1, H. R. Blevins, W. E. Fowler Jr.; 142-1, D. J. Clemens; 143-1, S. Messer Jr.; 149-2, W. W. Graham; 194-1, L. B. Kercher; 250-1, R. D. Whaley; 250-3, W. H. Apple, N. L. Oftedahl; 732-0, L. E. Rossi Jr.; 733-0, W. R. Russell, S. Serrano; 759-0, N. B. Byrd; 761-0, J. V. Backstrom, K. F. Cash, D. R. Cook, W. L. McDougal, C. W. Neal (four awards), L. L. Ripley; 763-0, W. H. Weatherby, J. D. Willingham; 834-1, B. Fortin; 964-2, J. H. Overdeer; 973-1, G. R. Dray; 973-3, R. P. Armenta; 979-3, G. L. Callon.

ETR

Dept. 979-6, P. A. Moore.

Employe Suggestion awards approved for the week ending May 19.

Dept. 001-0, R. Fredericks, F. Heaton, K. K. Jones, E. Mackey; 142-1, C. L. Cheves, J. P. Flatley; 143-3, H. A. Jackson; 144-1, W. H. Behrens, W. G. Lux (two awards); 144-2, S. G. Jenkins; 149-0, A. R. Zullo; 170-2, A. Jaggar; 195-6, R. L. Gillham; 401-0, A. W. Rawson; 452-0, R. C. Bostrom; 518-0, R. N. Allen; 761-0, H. E. Deyle (two awards), J. F. Koby, J. R. Teague; 763-0, R. L. Brown, B. K. Williams; 764-1, G. H. Owen; 810-0, T. K. Bishop; 831-0, V. J. Bordelon; 979-6, B. DeVeau.

Personals

CONVAIR

We wish to express our sincere thanks and appreciation to all of our Convair friends, especially those in Dept. 191-0 and 521-6, for the flowers, Mass, cards and many other acts of kindness at the death of our dad, Bill Jones.

Bette Clancy, Dept. 191-0
Wilma Denham, Dept. 521-6

* * *

We acknowledge with grateful appreciation your comforting expressions of sympathy.

Brothers and sisters of Les Farnam

* * *

We wish to express appreciation for the flowers and expressions of sympathy received after the death of our husband and father.

Claudine Miller and Family
Dept. 957-0

Retirements

CONVAIR

BLAAUW—Ekke G., Dept. 978-3. Seniority date Nov. 27, 1946, retired May 5.

CONCA—John J., Dept. 48. Seniority date July 7, 1954, retired April 2.

DiBIASO—Michael, Dept. 410-0. Seniority date April 10, 1952, retired May 12.

MATOUSEK—Arthur A., Dept. 780-3. Seniority date May 21, 1956, retired April 28.

MATOUSEK—Pauline G., Dept. 524-3. Seniority date May 21, 1956, retired May 19.

RAYFIELD—George T., Dept. 596-0. Seniority date Jan. 19, 1959, retired May 5.

Rider-Driver

CONVAIR

RIDE WANTED—From Nile and Thorn streets, North Park, to Kearny Mesa, 4:30 p.m. to 1 a.m. shift. Phone Silas Messer, ext. 2220 KM or (home) 282-5787.

RIDE WANTED—Poway to Kearny Mesa 7:30 a.m.-4:15 p.m. shift. Call Nancy McCartney, ext. 1373 KM, or home phone, 453-0681.

Deaths

CONVAIR

FOWLER—Walter S., Dept. 027-0. Died May 19. Survivors include his wife, Dorothy.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N.Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Convair Makes 'Honor Roll'

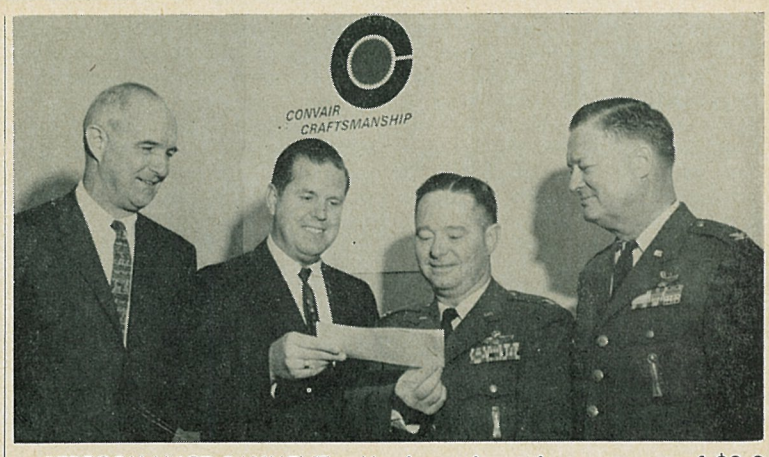
Convair division was placed on the Air Force Space Systems Division's Interagency Data Exchange Program (IDEP) "honor roll" for March for a series of component parts test and reliability and failure analysis reports submitted during the month.

Four California aerospace firms were singled out with "honor roll" listing from more than 50 firms participating.

IDEP is an Air Force, Army, Navy and NASA-chartered program providing interchange of test data among government agencies and contractors to reduce duplicated spending for component testing and system reliability improvement, and to alert industry to possible problems.

Use of IDEP reports last year enabled Convair to save $89,800 by shortening or eliminating component parts tests. Other savings included $164,600 for Electronics-Rochester and $64,500 for Pomona division.

Edward J. Reid of Convair's Dept. 562-0 manages the Parts Data Center in which all available parts information, including IDEP reports, are consolidated. The center was moved this month to Col. F-2 in Bldg. 33 at Kearny Mesa. The phone, ext. 2356, remains unchanged.



PERFORMANCE PAYMENT—Maximum incentive payment of $3.8 million for Atlas SLV-3 booster flight and countdown reliability is presented to Jack L. Bowers, Convair division general manager, left, and Grant L. Hansen, vice president-launch vehicle programs, by Col. Leo W. Sullivan and Col. J. L. Hamilton, right, of Air Force Space Systems Division.

Convair Receives $3.8 Million Fee For Flight Reliability

(Continued from Page 1)

contain the same kind of severe challenges. Convair has certainly shown that it can compete in this new environment."

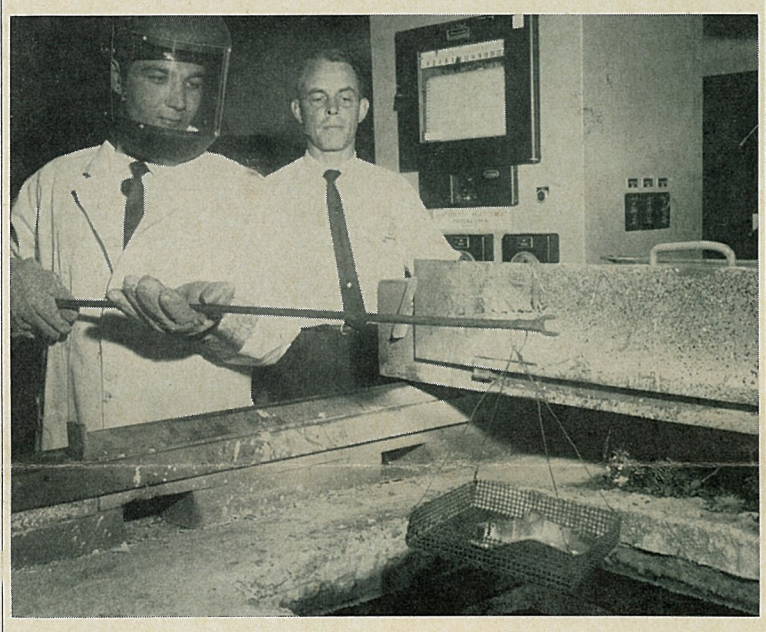
Grant L. Hansen, vice president-launch vehicle programs, said the contract under which the incentive award was made was "our first major venture in the Atlas program with incentive-type goals."

"We thought in 1962 that it was a rather challenging contract," he said. "But in 1965, based on confidence we had as a result of the successful Atlas flights recorded under that original incentive contract, we negotiated a follow-on contract with the Air Force calling for 100 per cent reliability."

The follow-on contract covers production and launching of 28 SLV-3s for space missions from 1966 through 1968.

"Our record to date on this new contract is 100 per cent flight performance for the nine missions launched," he said.

The nine flights included launch of three PRIME vehicles, two Lunar Orbiter spacecraft, two Applications Technology Satellites and two Air Force missions.



SALT BATH—Wayne Ivan of Convair materials and processes, dips aluminum electronic assembly in molten salt bath recently installed for aluminum brazing. John Baer, at right, is in charge of new facility to be used in support of production and prototype development.

Dip Brazing Facility Installed; Available to Divisions in Area

The only General Dynamics dip brazing facility in the San Diego area has been installed in Convair materials and processes laboratory at Lindbergh Field plant for the brazing of high strength aluminum assemblies.

It will be available to all other General Dynamics divisions in the vicinity as well as outside companies, according to M. D. Weisinger, process development research group engineer who is responsible for the lab.

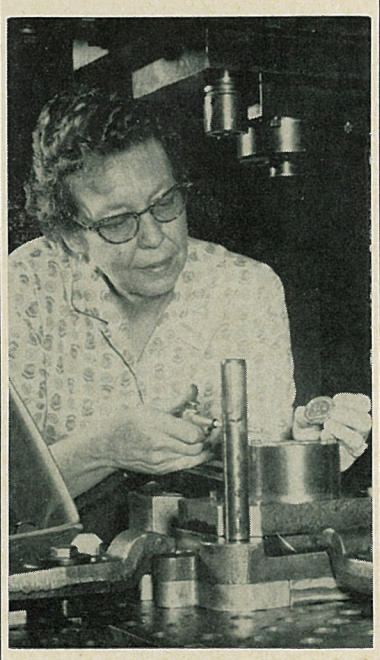
The new capability will be used to support production of components needed in such programs as the RMS-2 range measurement system being developed by Convair for the Army as well as engineering prototype work. Until now, such brazed assemblies had to be purchased from outside vendors or sent out of San Diego for brazing.

Aluminum brazing is especially desirable for such assemblies as radio frequency shielding and wave guide components which need continuous all-metal joints to prevent leakage of microwaves, John W. Baer, senior materials and processes engineer who will be in charge of the brazing facility, said.

Pure aluminum joints are much stronger and lighter in weight than soldered joints. Too, an assembly made up of several small components can be brazed in one operation and can be conventionally heat-treated to improve mechanical properties. This is not possible with assemblies with soldered joints.

JUNE 24 SALES DAY AT SALVAGE YARD

Next employes sales day at the Convair salvage yard, Lindbergh Field, will be Saturday, June 24.



COIN STAMPING—Jennie Cook, Convair punch press operator, stamps out commemorative medallions for Convair Management Club 25th anniversary observance on 113-ton press.

Vice President Humphrey Praises Convair's Role in Surveyor 3

(Continued from Page 1)

lunar trench are magnificent examples of the progress being made by your efforts."

Convair's Atlas-Centaur 12, performing with what officials described as "phenomenal accuracy," launched Surveyor 3 for its 65-hour, quarter-million-mile trip to the moon last month. The flight marked the first two-burn operational mission for Centaur.

Among other congratulatory letters on the AC-12 flight was one to Hansen from Kurt H. Debus, director of NASA's John F. Kennedy Space Center.

"The Convair division of the General Dynamics Corporation is assigned an important role in our nation's space program and thus the achievement of a milestone for your organization is likewise an important milestone for NASA and the space program," Debus said.

"The outstanding AC-12, SC-3 mission demonstrated a total capability of all concerned in the various disciplines of a complex operation to perform effectively and efficiently as an integrated team to accomplish all aspects of the planned results. In order to realize mission goals, the launch vehicle performance must be practically flawless and it must fulfill its assignment before other elements of the mission can operate.

"For the Surveyor-3 mission, the launch vehicle fulfilled its assignment in all respects as have the (General Dynamics) vehicles for many other applications and missions. . . .

"These missions are important for their fundamental major scientific findings, but in addition they are of major importance in that they uphold our nation's space image before all nations of the world. The record of performance . . . is one that you and (General Dynamics) can be justly proud of, since you have made major contributions to these significant programs.

"Each year, the missions and roles assigned to NASA become more difficult to accomplish and success . . . depends upon the prime contractors to provide reliable hardware and competent services.

"(Convair division of General Dynamics) has demonstrated that it can provide the hardware and services capable of meeting the stringent demands of the present space program and it is my desire and hope that you will redouble your efforts to continue to provide the best possible hardware and services to maintain your present series of successes in the missions now assigned to your vehicle."

NASA Orbiter Project Manager Adds Congratulations on Launch

Clifford H. Nelson, Lunar Orbiter project manager for NASA's Langley Research Center, has commended Convair for its role in the Lunar Orbiter 4 launch.

Nelson, in a May 11, letter to Grant L. Hansen, vice president-launch vehicle programs, said:

"We welcome this opportunity to convey our deep appreciation and heartiest congratulations to you and your project team for the highly successful efforts in support of the past four Lunar Orbiter launches.

"Lunar Orbiter IV is now in an excellent orbit around the moon, all systems are operating satisfactorily, and we are anticipating a successful photographic mission.

"We look forward to your continued effective support for the remainder of this program."

Convair's Atlas SLV-3 No. 5804 was booster for the May 4 launch from Complex 13 at the Eastern Test Range. The Orbiter 4 spacecraft has been photographing vast areas of the lunar surface as it circled the moon from near-polar orbit every 12 hours.

Travelers to Meet Tonight For Briefing

General Dynamics people interested in European tours will meet tonight, May 31, 7:30 p.m., in the CRA auditorium to hear details of the trips.

Two 22-day package tours are scheduled for Sept. 30 departure. Full information is available from Inez, CRA headquarters, ext. 1111 KM.

METAL HANDLING—THEN AND NOW—Center and far right photos show former method of handling aluminum turnings in loose condition and present procedure of melting scrap metal into ingots and storing in 2,000-lb. stacks at Los Angeles smelter. Manuel Milan, in center shot, positions 600-lb. bale of loose metal in storage yard at Aaron Ferer & Sons, San Diego dealer. At far left, tub of Convair aluminum turnings is poured into one of drag-on containers which will continue to pick up metal in loose condition at division production plants each day for hauling to handler. Containers hold 30 tubs of metal.

Corporate News in Brief

Two F-111As make un-refueled flights across Atlantic on eve of Paris Air Show.

* * *

First C-5 parts loaded in fixtures as Convair begins production operations.

* * *

Convair to recover $1½ million over next five years through new procedure of handling aluminum scrap.

* * *

Navy's second nuclear-powered guided missile frigate, USS Truxton, armed by Pomona division-built Terrier missiles, commissioned at Camden, N. J.

* * *

Vice President Hubert Humphrey is among those sending congratulations for Convair's role in Surveyor mission.

* * *

Quincy division has purchased $25 million in materials and services from small businesses during first three months of 1967.

* * *

Parts are virtually "untouched by human hands" in new fully automated chemical and metallurgical processing facility now in operation at Fort Worth division.

* * *

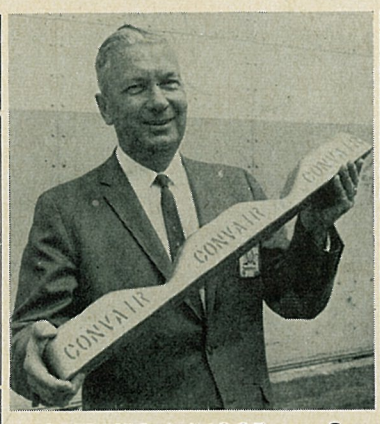
Extensive General Dynamics exhibits will be on display next month at both the Paris Air Show in France and the annual meeting of the Marine Technology Society in San Diego.

* * *

Convair division has received a $3.8 million maximum incentive fee for exceeding 90 per cent flight reliability on production and launch of 35 Atlas SLVs.

* * *

Air Force F-111As flew 18 sorties and stayed aloft 31½ hours, May 21, majority involved in Armed Forces Day observances.



OPERATION INGOT — Convair's Ray Lange, who conceived new metal handling method, shows aluminum ingot marked with Convair name.

Convair Inaugurates Scrap Conversion Plan

(Continued from Page 1)

five years! Some 3,000,000 lbs. will be turned out this year, building up to 7,000,000 lbs. by 1969.

According to Lange, the local servicer cannot store more than 200,000 lbs. at any one time, and the baler cannot handle Convair's borings which will amount to half a million pounds a month. Now, about 200,000 pounds a month is generated at Convair's three production plants—Kearny Mesa, Lindbergh Field, and Air Force Plant 19. It is now picked up daily at all three plants, but will have to be picked up several times a day when C-5 and F-111 work reaches peak production at Lindbergh Field plant and Plant 19.

Too, shipment of baled metal is limited to local markets since a freight car will hold only 40,000 lbs. of baled metal. A minimum of 60,000 lbs. is required for transport to the East Coast.

The volume of metal thrown on the local market keeps the prices in a fluctuating state, explained Lange.

"Now that we have facilities to store thousands of pounds in ingots, we can take advantage of all markets and the best price offers," he said.

First batches of aluminum turnings and borings were shipped to Los Angeles the first week in May. Over 300,000 lbs. had been accumulated over the month and a half since the contract was signed the latter part of March. Although the present arrangement calls for the San Diego handler to pick up the metal and truck it to the Los Angeles smelting firm, future planning may see a smelter located in the San Diego area to process metal for Convair as well as for other companies who are following the General Dynamics division's lead.

Lange was honored the middle of May by Convair Division Manager Jack L. Bowers in a presentation of a Certificate of Commendation recognizing his cost improvement achievement for the division.

'No Service Charge' New Policy at Bank

City Bank of San Diego is putting into effect a "no service charge" policy for checking accounts and has invited Convair personnel to take advantage of it.

No minimum balance will be required and there will be no limit to the number of checks an individual can write, according to J. H. Sharpe, bank executive vice president. For those who already have checking accounts at City Bank, service charges will end with the June statement.

Ideas For Saving Helium Gas Pay Off Big For Suggesters

Employe Suggestion Awards totaling nearly $10,000 were awarded recently, both dealing with savings relative to helium gas.

E. B. Woodward, Convair design engineer, received the maximum $5,000 award for a proposal to reduce the usage of helium in the Atlas missile. He collected his check while on loan to Fort Worth division on the F-111 program. The ES saved $57,000 during less than one year. Installation cost was about $9,000.

Woodward's suggestion permits the Atlas helium purge to be operated at 100 psi during the pre-launch period rather than the previously required 1,000 psi.

The conservation of helium—an expensive and scarce gas—has been termed "appreciable" as a result of the cut-back operation.

After an analysis of the system revealed that 100 psi could be used, Woodward came up with his ES.

His idea was to "tap into the 1,000 psi line" with a new line which would permit the regulator to be operated at 100 psi.

Woodward was loaned to Fort Worth during March and returned to Convair division this month.

Nearly as remunerative was a $4,525.60 check earned by Roger R. Rote, a Convair test lab technician at Test Site B, Sycamore Canyon.

Rote's suggestion will save 980,000 cubic feet of helium gas by eliminating need for its daily use for pressurizing a 7,000-gallon liquid nitrogen storage tank at Site B.

The storage tank now is being pressurized by liquid nitrogen boiloff, which is collected, vaporized and pumped back into the top of the tank until desired pressure is attained.

Vaporizor and pressure control regulator hardware being used was already available at the site.

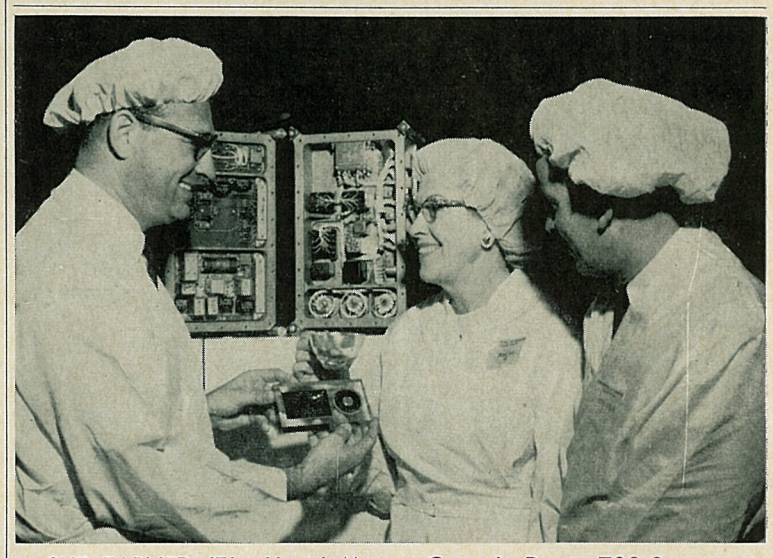
Liquid nitrogen is being used in tests on Centaur fuel and vent valves and on Saturn 4-B airborne relief valves.

People Mobility

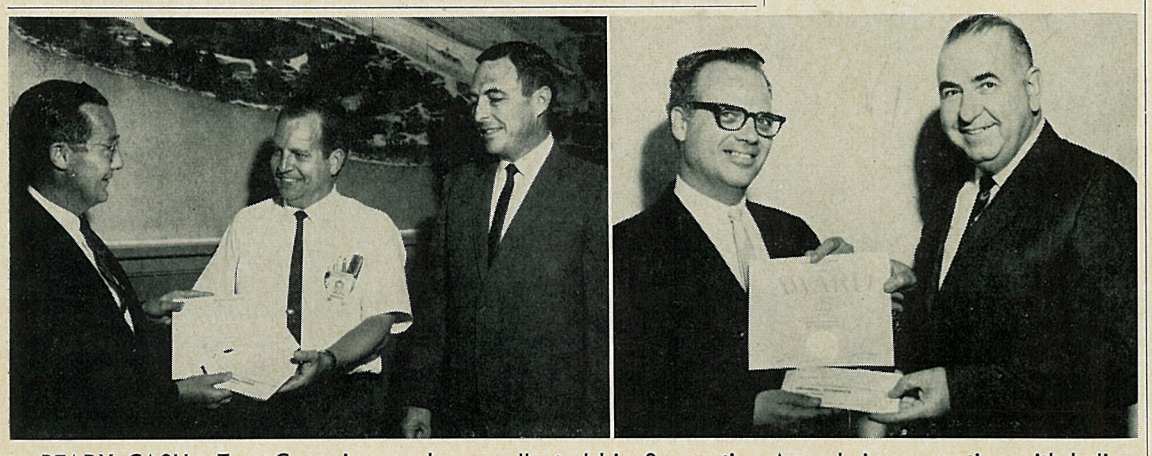
Interdivisional Transfers

(Following are recent personnel transfers among General Dynamics divisions. In parentheses are dates when individuals joined the company.)

GERALD K. KREYLING (1966) from Electronics, San Diego to Stromberg-Carlson, Data Products as engineering drawing checker; **WAYDE T. GILLIAM JR.** (1966) from Convair to General Atomic; **LEROY G. ATKINSON** (1951) from Convair to senior engineer, Electronics, San Diego; **LESTER G. NELSON** (1957) from Convair to 111 logistic support, Fort Worth; **LOUIS L. FOWLER JR.** (1959) from Fort Worth to Convair as price estimator; **BERNARD TUROVLIN** (1956) from General Atomic to Convair; **EDGAR E. HUTCHESON** (1964) from Electronics, Rochester to senior cost estimator, Electronics, San Diego; **DONALD F. DeKOLD** (1966) from Dynatronics to Electronics, San Diego; **CHARLES B. ROBINSON** (1947) from Convair to material control analyst, Electronics, San Diego; **DAVID R. SMITH** (1956) from Corporate Headquarters to Stromberg-Carlson (Camden, Ark.) as industrial relations manager; **THOMAS V. McGUIRE** (1962) from Electronics, Rochester to senior research engineer, Convair; **ROBERT B. BLACK** from Electro Dynamic to Electric Boat; **FREDERICK R. SCHROEDER JR.** from Corporate Headquarters to Fort Worth.



SHE EARNED IT!—Hazel Myers, Convair Dept. 780-2, accepts coffee cup trophy for winning "bet" involving more than 10,400 perfect solder connections. At left is Jay M. Farrar, operations project engineer. Robert Steiger, assistant foreman, is at right.



READY CASH—Two Convair men have collected big Suggestion Awards in connection with helium conservation. In photo at left, E. B. Woodward, center, received his check while on loan to Fort Worth division, from R. H. Widmer, division vice president research and engineering, as J. R. Vaughan, Fort Worth chief propulsion and fluid systems design, watches. In photo at right, Roger R. Rote, Convair test lab technician, receives his check from Paul Ferrara, Convair director of engineering administration and services.

Shining Payoff

Challenge of 10 Months Ago Met as She Wins Coffee 'Bet'

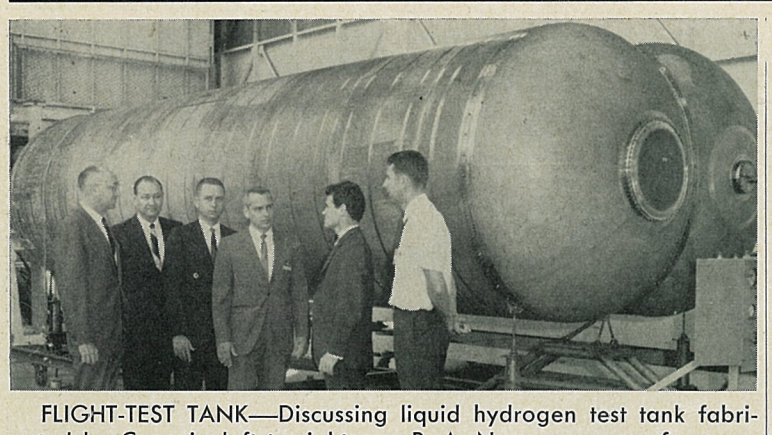
Ten months, 1,430 hours of work and more than 10,400 solder connections later, Hazel Myers won the "bet."

It was last July when Jay M. Farrar, Convair electronics manufacturing operations project engineer, challenged Mrs. Myers to wire 20 High Impulse Retrorocket System (HIRS) attitude control "packages" with no mistakes.

"I'll buy you a cup of coffee if you can do it," Farrar said.

This month Farrar paid off by presenting her with a special coffee cup trophy and a letter of commendation. A plastic base for the cup carries an engraved plate describing the achievement and a shiny new dime encircled by "Enjoy your coffee — you've earned it!"

Farrar also commended other department members on their "excellent performance" on the HIRS units and reported that assembly had been completed on schedule and below expected cost.



FLIGHT-TEST TANK—Discussing liquid hydrogen test tank fabricated by Convair, left to right, are R. A. Nau, manager of maneuverable and reusable launch vehicles group; H. C. Medearis, Air Force Plant 19 general foreman; L. R. Phillips, Air Force contract monitor; Keith Collier, chief of the applied mechanics branch of the U.S. Air Force Flight Dynamics Laboratory; J. H. Heathman, project leader; and J. C. Hopkins, manufacturing task leader.

Liquid Hydrogen Test Tank Built For Simulating Future Flight

Convair division recently completed fabrication of a large-scale liquid hydrogen fuel tank at Air Force Plant 19 for use in tests at Point Loma Test Site that will simulate the environment in which future manned hypersonic aerospace vehicles will operate.

Aircraft with similar tanks will cruise at 100,000 feet at six times the speed of sound and will be powered by advanced propulsion systems under development in the nation's aerospace program.

The test tank, with a capacity for 6,000 gallons of liquid hydrogen, was made from thin-gage (.016-inch) 718 nickel superalloy, incorporated more than 400 feet of fusion welding and weighs less than 900 pounds.

It is 20 feet long and has a cross section of two intersecting 64-inch-diameter circles for a total width of eight feet. End closures are elliptical domes.

Unlike Atlas and Centaur tankage, which also are of thin-gage construction, the test tank utilizes frame stiffened cylindrical sections and a unique center beam instead of pressure for structural integrity.

It is enclosed in an all-quartz-fiber helium-environment insulation system for thermal protection for the structure and to avoid excessive fuel boil-off.

The test tank currently is undergoing structural acceptance tests at Convair's Harbor Drive facility.

Environmental tests simulating Mach 6 flight at 100,000 feet altitude (with 1,300 degrees F. outer structural temperature and -423 degrees F. fuel temperature) will be conducted in an environmental chamber at Point Loma in August and September.

A booster pump and vent manifold system will be used in fuel management with programmed liquid hydrogen defueling under flight environment conditions.

Design, fabrication and testing of the tank is being accomplished under a contract from the Air Force Flight Dynamics Laboratory at Wright-Patterson AFB, Ohio.

John H. Heathman of Dept. 581-5 is directing the project, which is under Convair's maneuverable and reusable launch vehicles group.

"Convair's work on the project during the past three years has significantly advanced 'state-of-the-art' in hydrogen tankage technology," Heathman said. "Areas covered included establishment of associated hydrogen thermal behavior, insulation and fuel system requirements and use of advanced fabrication methods with a relatively new structural material."

The design team for the tank included A. F. Fujimoto, structure; J. F. Fischer, stress; G. B. Yates, thermodynamics, and Walter Egli, fuel systems.

John C. Hopkins was manufacturing operations task leader and James L. Lester is test operations task leader.

Tank fabrication and assembly was under the direction of H. C. Medearis, Air Force Plant 19 general foreman, with Ray Kendall, Robert Welk and Frank Fitch as supervisors.

The manufacturing development team included K. E. Fountain, tool projects; W. F. Matern, tool manufacturing; W. M. Walker, welding engineering; and W. B. Barth, operations program control.

Rockhounds To See Slide Presentation

"Artistry of Wind and Water," a slide-narration program by George and Virginia Forbes, will be presented at the Rockhounds meeting at 7:30 p.m. June 14 in the CRA Clubhouse auditorium. The club's new officers will be installed and plans for the annual picnic will be discussed.

Team Supports Langley Tests

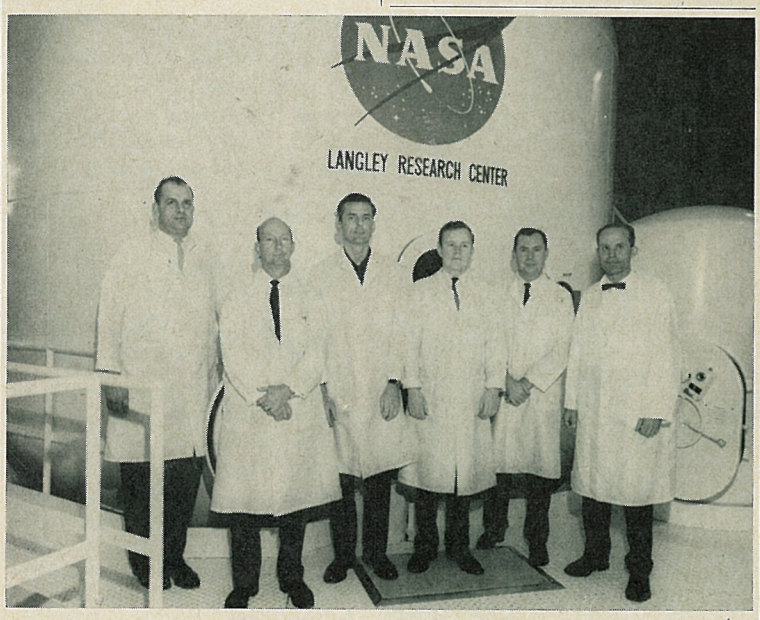
A Convair "team" providing technical support for the division-built integrated life support system (ILSS) at NASA's Langley Research Center in Virginia has assisted with more than 5,000 hours of subsystem tests.

The ILSS is designed for support of four men "in space" for one year and its development at Convair involved integrated effort between many biological and engineering disciplines.

Robert C. Armstrong, M.D., manager of Convair life sciences section, said exploratory and evolution tests during the past year at NASA-Langley have defined a number of significant improvements for both ILSS equipment and procedures.

Albin D. Pearson of NASA-Langley's environmental factors section is manager for the life support system test program. Members of the Convair "team" are B. F. North (supervisor), R. F. Holmes (lead engineer), E. E. Keller (lead chemist), B. W. Hryekewicz, D. W. Kegebein and R. E. Snyder.

Future long-duration tests will be conducted with a four-man crew residing continuously in the ILSS "test bed" and undergoing activity simulating that of an actual space mission.



SUPPORT TEAM—Convair personnel providing technical support for Convair-built integrated life support system (background) at NASA Langley Research Center are, left to right, B. W. Hryekewicz, B. F. North, D. W. Kegebein, R. E. Snyder, E. E. Keller and R. F. Holmes.

Damage Prevention Program to Involve 500 Key Personnel

About 500 Convair division personnel who handle material will be asked to help identify and resolve problems to reduce material damage.

The "problem solving" will be included in a series of five one-hour Damage Prevention Program meetings scheduled at Kearny Mesa and Lindbergh Field beginning early in June.

Concepts for the program have been developed by a group of department managers and chiefs in conjunction with educational services.

Supervisors in material handling departments will be briefed on the program in the initial meeting.

Members of the program planning group are W. J. Stanley, Dept. 250-0 (chairman); J. N. McPheeters, Dept. 830-0; G. M. Davidson, Dept. 059-3; L. W. Kerner, Dept. 970-1; Frank Hockenberger, Dept. 832-3; J. F. Speed, Dept. 250-5; J. A. Croft, Dept. 130-3; and W. F. Weidenfeller, Dept. 130-3.

'Hot Box' Schedule On Mail Repeated

The following expedited mail schedule is reprinted for the convenience of Convair people who are speeding inter-plant mail by the "hot box" service.

Leave Kearny Mesa mail room at 7, 9:30, 11:30 a.m., 2 p.m.

Arrive at Plant 19 at 7:45, 9:45 a.m., noon, 2:15 p.m.

Arrive at Lindbergh Field mail room at 8, 10:05 a.m., 12:20, 2:30 p.m.

On return trip arrive at Plant 19 at 8:40, 10:55 a.m., 1 and 3:15 p.m.

Arrive at Kearny Mesa at 9, 11:30 a.m., 1:30 and 3:45 p.m.

Pickup boxes are located inside the KM mail room; outside the LF mail room; at the southeast corner of LF Bldg. 2; at Plant 19 on the west side of Bldg. 2.

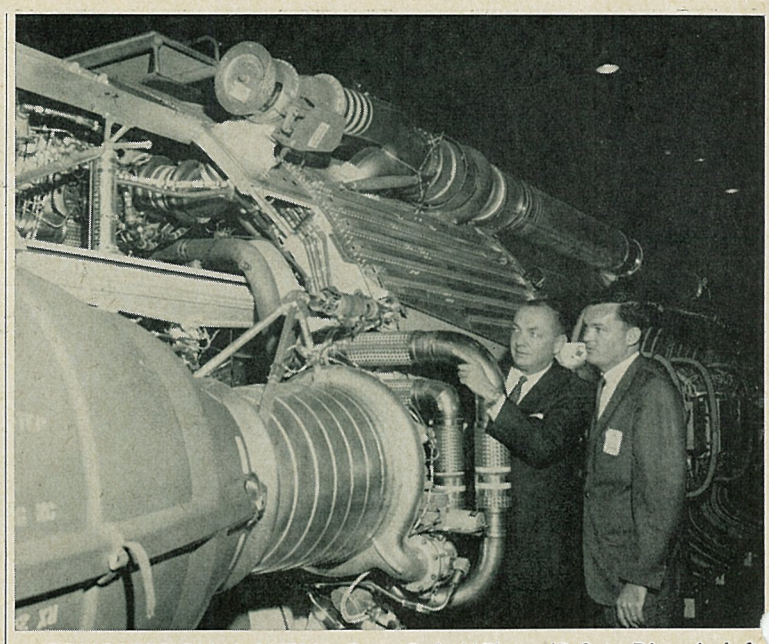
Kearny Mesa Library Now Has 'Direct Dial'

Convair division's library at Kearny Mesa has new telephone lines, enabling employes to dial direct to service locations within the library.

Numbers are: library office, ext. 1073; acquisitions (material to be ordered), ext. 1343; circulation (books, periodicals and documents, ext. 1075; reference and literature searches, ext. 1075; microfiche center, ext. 1073; and cataloging and processing, ext. 831.

Keith Blair, chief librarian, said use of the additional lines will save time and increase efficiency.

There is no change in extension numbers for library facilities at Lindbergh Field.



CONGRESSIONAL VIEW—Rep. Bob Wilson (R-San Diego), left, discusses new Convair Atlas SLV-3C booster with Fred Lee Jr., launch vehicle programs manager of reliability control, during recent visit to Kearny Mesa plant. Wilson met with Jack L. Bowers, Convair general manager, for briefing on division product lines and objectives.

General Dynamics Will Join In Marine Technology Display

General Dynamics will be one of the companies displaying advanced products at the Marine Technology Society in San Diego, Calif., next week, June 5-7.

Some 3,000 engineers and scientists are expected at the annual meeting, held for the first time outside of Washington, D.C. Displays of smaller hardware components will be in the Community Concourse and ships used in ocean exploration will be moored at the Broadway Pier. Some of these ships will be open for public inspection this Sunday, June 4.

GD vehicles on exhibit will be the Convair-developed oceanographic data-gathering buoy, "Bravo," which recently concluded over a year's series of tests in Atlantic Ocean waters for the Office of Naval Research, and SKIP-1, the surface effect vehicle developed by Electric Boat division. The 22-ft. ship rides a cushion of air about a foot above the surface. SKIP-1, which stands for skimmer investigation platform, can skim over water at a speed of 60 knots. It also can move across land.

About 150 companies will have exhibits at the Concourse during the three-day meeting.

Sessions will deal with governmental aspects of marine technology, oceanography, and navigation, mineral and oil exploration, diving safety, materials and power sources, surface wave measurements, deep submergence, and unmanned ocean systems.

'Craftsmanship Achievement' Banners Awarded to Depts.

New "Convair Craftsmanship Achievement" banners have been awarded outstanding departments, recognizing performance during the first three months of 1967.

The white and gold banners, inscribed with the red and black Craftsmanship seal, will be presented quarterly to winning departments or functions by division staff members and off-site base managers.

Selection of winners is based on number and realism of departmental goals and performance in working toward them. First-quarter winners were:

Lindbergh Field operations — tooling Dept. 400.

Launch vehicle programs—Atlas launch control Dept. 988-9.

Controller—general accounting Dept. 191-0.

Reliability control — radiographic laboratories Dept. 141-4.

Vandenberg AFB — financial control Dept. 985-6.

Eastern Test Range — Complex 36, Dept. 979-1.

AIAA Papers to Deal With 1980 Designs

General Dynamics employes intending to submit papers for the AIAA National Meeting on "Aircraft Design for 1980 Operations" the first part of next year have until June 12 to submit abstracts.

Papers are invited on the solution of design and operational problems of near-future aircraft. Contributions dealing with the solution of problems encountered with recent designs are particularly desired.

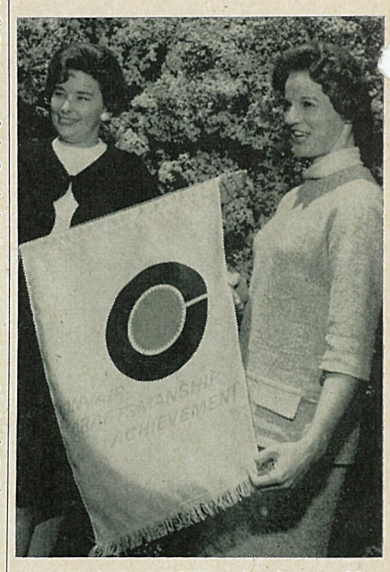
Abstracts, 500 to 1,000 words, should be submitted in accordance with division procedures to the general chairman, Ira G. Hedrick, Grumman Aircraft Engineering Corp., Bethpage, N. Y. 11714.

Track, Field Meet Bargain Offered

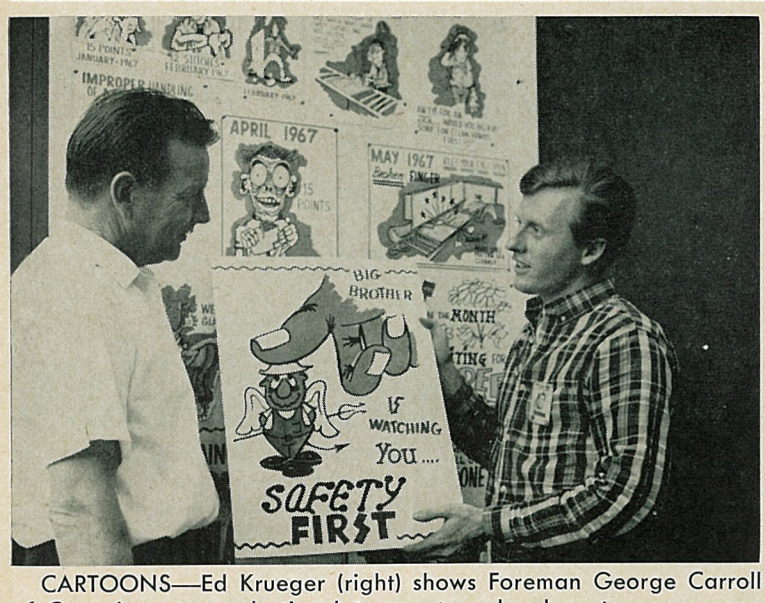
Reduced-price tickets for the third annual San Diego Invitational Track and Field Meet June 10 in Balboa Stadium are on sale at all employe services outlets.

Adult tickets are $3.50 for reserved seats ($1 saving) and $2.50 for general admission (50c saving). Tickets for children under 16 accompanied by an adult are $2 and $1.50. Purchase deadline is June 6.

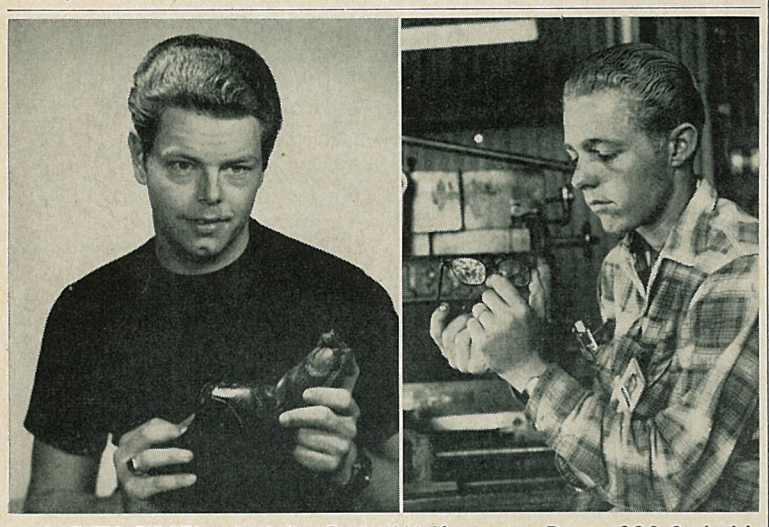
Be sure to use the ZIP code when addressing mail. It speeds up delivery!



NEW BANNER—Barbara Hogan, a secretary in Dept. 961-0, and Alice McCarty, a secretary in Dept. 190-0, display first of new Convair Craftsmanship Achievement banners being awarded by division departments to functions achieving best record during three-month period.



CARTOONS—Ed Krueger (right) shows Foreman George Carroll of Convair mats production latest cartoon he drew to go on area bulletin board. Krueger, amateur illustrator, is helping department's safety drive with colorful and original drawings.



SAFETY FIRST!—At left, Craig Wulfemeyer, Dept. 830-0, holds safety shoe that took brunt of steel plate which could have torn into foot. In photo at right, Gary Sjoberg, saw operator in Dept. 401-6, shows shattered safety glasses which saved his right eye in recent accident.

Safety Equipment Saves Three From Probable Serious Injury

Three Convair men escaped serious injury recently by wearing safety glasses and safety shoes.

Gary Sjoberg, Dept. 401-6 saw operator at Lindbergh Field plant, has the sight of his right eye thanks to safety glasses, while Craig Wulfemeyer, Dept. 830-0, and R. D. Dempsey Jr., Dept. 731, both avoided what might have been critical foot injuries by wearing safety shoes.

Sjoberg was operating a band saw in the Bldg. 46 material remnant crib when the blade broke into three pieces in a freak accident. One piece flew into the right lens of Sjoberg's glasses while he was leaning over the blade making a measurement on the cold roll steel bar being cut.

"No one will ever have to convince me of the value of safety glasses," he said.

He received his membership in the Wise Owl Club of America this month. Wise Owl membership is made up of employes who have actually saved their sight through wearing eye protective equipment at the time of an on-the-job accident, Jack Garrison, Convair chief safety engineer, explained. The program is sponsored by the National Society for the Prevention of Blindness, Inc.

Wulfemeyer was working in the Lindbergh Field plant steel yard when a steel plate fell and struck his foot, tearing into his safety shoe.

Dempsey's accident was at home, while he was mowing the lawn with a power mower. As he pulled the mower backwards, he tripped and his foot went into the revolving blade. Safety shoes protected his foot.

Both Wulfemeyer and Dempsey are eligible for membership in the Golden Shoe Club, national organization to promote caution on and off the job.

PADRE TICKETS AT REDUCED PRICE

Discount coupons to the Padres' June 13 game with Vancouver are available at all General Dynamics employe services outlets. General admission, with the coupons, is reduced to 50 cents.

ELECTRONICS PATENT—J. B. Gehman, left, engineering staff specialist at Electronics-SD operations, receives U.S. Patent No. 3312971 from Dr. Ralph McCreary, Electronics-SD director of engineering, for patent on ASK, aircraft station keeper radar system. General Manager D. C. Prim, center, took part in presentation. This was Gehman's 10th issued patent.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111, Kearny Mesa. Deadline for next issue of GD/NEWS is June 6. Call ext. 1071 LF, or 3322 KM.)

★ ★ ★

ADVENTURERS — Meeting changed to June 7, 7:30 p.m., CRA auditorium. Slide showing open to public.

ARCHERY — Single American shoot Sunday, June 4, 1 p.m., CRA range. Meeting Friday, June 9, 7:30 p.m., CRA Clubhouse.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BONAIR FLYERS — Meeting June 6, 7:30 p.m., CRA Clubhouse.

BOWLING — Summer leagues begin play this week.

BRIDGE — Play each Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS — Play Wednesdays, 7:30 p.m., CRA Clubhouse.

DELTA DIVERS — Meeting June 14, 7:30 p.m., CRA Clubhouse.

FENCING — Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB — Meeting June 7, 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF — CRA tournament June 3-4, Chula Vista course.

HI-FI/MUSIC — Meeting June 13, 7:30 p.m., CRA Clubhouse.

ICE SKATING — GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

PISTOL CLUB — Shoot, June 11, 9:15 a.m., SD Police Pistol Range.

RADIO — Meeting June 1, 7:30 p.m., CRA Clubhouse.

RIDING CLUB—Meeting June 14, 7:30 p.m., CRA Clubhouse.

RIFLE — Junior shoot June 3, 1 p.m., senior shoot June 14, 7:30 p.m., Gillespie Field Range.

ROCKHOUNDS — Meeting June 14, 7:30 p.m., CRA Clubhouse.

SKI CLUB — Awards banquet June 3, Catamaran Hotel. Water skiing Thursdays, 5:30 p.m., Saturdays and Sundays, 9 a.m., Crown Point. Call Harry Eastman, 274-4982.

SPANISH — CRA Spanish course for tourists starts June 15, 7 p.m., Convair executive dining room, Lindbergh Field. Registration at first meeting. Call Jim Hardison, 276-5805, for information.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB — Serra Mesa Club meets first and third Mondays, 7:30 p.m.

TRAVELERS — Meeting June 6, 7:30 p.m., CRA Clubhouse. Call Virg Marshall, ext. 744, LF, for information.

TROPICAL FISH — Meeting June 12, 7:30 p.m., CRA Clubhouse.

WOMEN'S GOLF — Ernie Paul Memorial Tourney June 10, Mission Bay course.

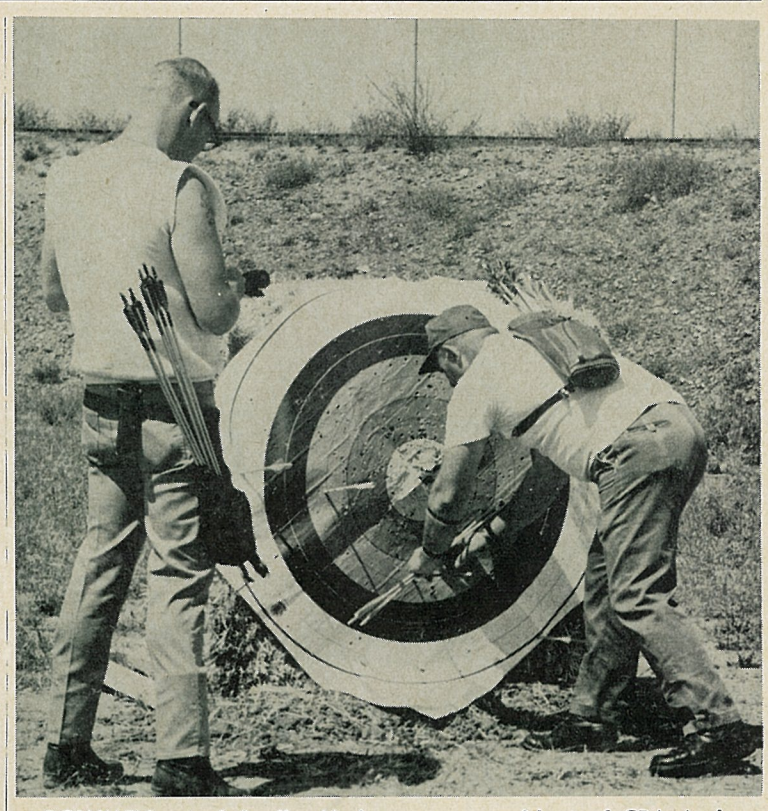
Club Will Sponsor Caliente Race Day

Convair Management Club is hosting a "Day at the Caliente Races" at reduced price for members and families, Sunday, June 25.

Arrangements have been made with the Agua Caliente Turf Club for the special price of $2.50 a person for a margarita cocktail hour at noon, followed by a 1 p.m. deluxe buffet in the Turf Club. Normal price is $4. The club requests street attire, coats and ties for men and dresses for the ladies.

Entrance to the Turf Club is through the Clubhouse at the track.

Tickets to the event are on sale by Boosters at plant outlets, according to Mike Alianelli of the Management Club's tours committee.



BOWMEN—At left, Jim Hudson, new president of CRA Archery Club, figures score while Harry Black removes arrows from target at CRA range. Twenty-one archers, from age 7 up, tried their skill at recent shoot.

Jim Hudson Elected President Of Reactivated Archery Club

Jim Hudson will head the reactivated Archery Club as president for the coming year following elections this month, CRA Commissioner Al Stone reports.

Serving with Hudson are C. H. Vassar, vice president; June Ross, secretary; John Roehl, target captain; and David Mathews, publicity.

Sons, Jimmy Hudson and Terry Roehl, will act as assistants to the target captain.

The group has grown to a membership of over 50 since it was reorganized early this year.

Regular target shoots are held the first and third Sundays of each month at the CRA range, Kearny Mesa. Business meetings are on second Fridays of the month in the CRA Clubhouse.

Next shoot will be June 4 and business meeting on June 9.

Deadline Tomorrow For Baseball Draw

Last-minutes entries in the CRA baseball drawing for free tickets to June games of the Padres will be accepted through tomorrow, June 1. Lucky winners' names will be drawn June 2.

Entry slips are limited to one per person. Slips must include employe's name, division, plant, department number, shift, and plant phone extension.

Baseball drawing boxes are at Convair, Stromberg-Carlson, Electronics employe services outlets; Lindbergh Field engineering mailroom; H. C. Medearis' office, Plant 19; and CRA Clubhouse, Kearny Mesa.

Pistol Club Elects Halfacre President

Jim Halfacre has been elected president of CRA Pistol Club. Other officers are Warren Ranscht, range officer, and Roland E. Schneider, statistical officer.

Ranscht, Roscoe Anderson and Halfacre were top men in .22-caliber Camp Perry course firing May 14 at the San Diego police range. Expert honors went to Angrim B. Carlson, Dale Young and Pete Ward.

In short national match course competition for any center-fire caliber pistols the same day, J. S. Knutson led Ranscht, Joe Williamson, and Halfacre.

Stereo Equipment Subject of Meet

Reini Braun, an Electronics-SD audio engineer, will discuss available automobile stereo equipment at the Hi-Fi Club meeting at 7:30 p.m., June 13, in the CRA Clubhouse. Visitors will be welcome.

Information will be presented on manufacturers, prices, equipment characteristics, comparative ratings, four and eight-track cartridges, speakers, and installation techniques.

Flight A Golf Won By Freda Magargal

Freda Magargal led the field of 33 lady golfers to win the trophy in Flight A at the May 13 GD Women's Golf Club tourney over San Carlos course.

Flight A runners-up were Mabel Humphries, Mary Salisbury, Jeannine Letzring.

Evelyn McFall shot low score in Flight B for the trophy award. Connie Vander Bye was second; Edith Mellett, third; and Vi Hurst, fourth.

Next month's tournament, June 10, will honor the memory of the late Ernie Paul who helped organize the women's golf club several years ago. Winner's name will be engraved on the Ernie Paul perpetual trophy, kept on display in the CRA Clubhouse.

Mountain Shots To Be Shown June 7

CRA Adventurers will meet at 7:30 p.m. June 7 — one week earlier than the usual monthly meeting date — in the Clubhouse auditorium for a 90-minute color slide show on mountains, mountain people, and mountain climbing. There will be no admission charge.

Dick Bowen, CRA commissioner, said the slides have been compiled from private collections of 10 Sierra Club members. Included will be slides taken by Jim Moore of Convair during an expedition in the Peruvian Andes.

Sign Now For Trip To Dodgers vs. Giants

A group trip to the Los Angeles Dodgers game with the San Francisco Giants June 25 will be arranged by CRA for all General Dynamics people and their friends.

Early reservations are required, Pete Beyrer of CRA said. Sign-ups are being taken now at CRA Headquarters, ext. 1111, Kearny Mesa, and at Lindbergh Field employe services, ext. 430 LF.

Buses will leave the flagpole in front of Kearny Mesa Bldg. 2 and the Bldg. 19 parking lot at Lindbergh Field at 9:30 a.m.

Transportation and game admission will be $5.50.

CHARTING PERFORMANCE—Gordon Briggs, inspection supervisor, plots weekly quality performance record for Dept. 762 on 30 X 40-inch chart as Steve J. Barinka, chief of Centaur final assembly, and Jack Oliver, leadman, observe. Performance charts are being used in 32 Convair departments.

'Quality Performance Charts' Reflect Weekly Dept. Standings

New 30x40-inch quality performance charts have been put into use by 32 Convair division departments to give employes a look at number of defects by category each week.

L. I. Medlock, director of reliability control, said the new charts are helping to reduce errors by pinpointing problems and causing employes and supervisors to pay attention to details that otherwise might be overlooked.

Each of the charts is posted in a central location and contains a printed list of procedures performed by the department. Defects or errors in each category for the previous week are posted each Monday.

Medlock said the charts will be instrumental in helping the division reach its 20 per cent quality improvement objective for the year. They are being used by departments at Kearny Mesa, Lindbergh Field and Air Force Plant 19—including six non-manufacturing departments.

"Manufacturing operations departments achieved their 20 per cent quality performance improvement goal in April," Medlock said. "Although we are extremely pleased with performance for the month, we must remember we have not reached our goal for the year to date."

Medlock said use of the new charts and study of "category of defect" information by supervision will provide a guide for effective corrective and preventive action. "Elimination of error 'cause' situations will result in improved quality levels," he said.

Convair Secretary Heads Single Set

Emily Trapp, a secretary in Convair's Dept. 142-0, writes a "San Diego's Singles' Scene" column on activities for single people in the San Diego area which is being published each Monday in the Evening Tribune.

She is president of the Council of Clubs for Single People, composed of 15 member clubs, and is secretary of The Single Set club and editor of the club's newspaper, "The Solitaire."

If one copy is sufficient, why order more?

Atlas Ready For Mariner Launch at ETR

Convair's Atlas SLV-3 No. 5401 stands ready at Complex 13 at the Eastern Test Range for a launch next month that will start a Mariner spacecraft on a four-month journey for rendezvous with the planet Venus more than 48 million miles in space. Second-stage vehicle for the mission is an Agena D.

A 15-man team from Convair was at ETR last week with Jim Von der Wische, Convair program manager for NASA SLV-3 programs. J. W. Ball was team captain and C. C. Campbell chairman of equipment assessment.

Others and areas of responsibility were Kenneth Catlin, propellant utilization; G. R. Anspach, engine systems; H. E. LaNois, pneumatics; G. D. Clapp, hydraulics; H. E. Newcomb, electrical; R. C. Packer, instrumentation; H. E. Harper, autopilot; J. W. Taylor, quality assurance; R. S. Stevens, structures; R. E. Johnson, history jackets-electrical; R. A. Freedman, history jackets-mechanical; F. J. L'Heureux, launch control, and J. M. Simmons, range safety.

The Mariner-Venus '67 spacecraft is expected to come within 3,000 miles of Venus and will come closer to the sun than any previous man-made object as it goes into solar orbit.

Mission objectives include further investigation of the Venusian atmosphere, magnetic field and radiation.

Club Members, Wives Hosts to Children

Disneyland made a big impression on 123 underprivileged San Diego children who spent the day there May 21 as guests of Convair Management Club.

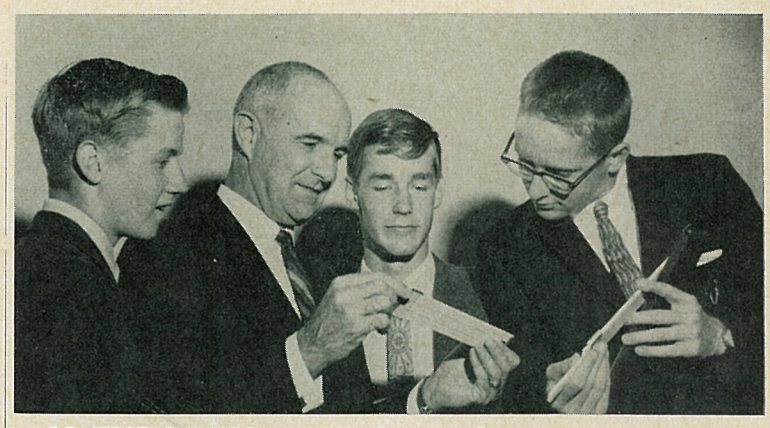
The trip was financed by proceeds remaining from the April 8 General Dynamics family party at Disneyland.

G. E. Nuss was trip chairman. Club members and wives who served as escorts were: Mr. and Mrs. Mike Alianelli, Ken Fountain, Walter Dunes, Don McMurtrey, Bob Mitchell, Mr. and Mrs. Jess Gonzales, Mr. and Mrs. Darwin Isaac, Carl Stark, Jean Walker, Tony Genco, Mr. and Mrs. Larry Simek, Mr. and Mrs. Don Tessereau, Mr. and Mrs. Art Medrano, Mr. and Mrs. Don Holzer, Mr. and Mrs. Dick Stull, Mr. and Mrs. Harold Shaulis, Mr. and Mrs. Harold Miller and Ben Martinez.

W. J. Ridge President Of Value Engineers

Warren J. Ridge of Convair's cost reduction and value control staff has been installed as president of the San Diego chapter of the Society of American Value Engineers.

John B. Cianciarulo, value engineering support engineer for the Defense Contract Administration Services plant representative's office at Kearny Mesa, is membership chairman.



CONTEST CHAMPS—Jack L. Bowers, Convair general manager, compares slide rule finding with youths who won $100 awards in 10th annual division-sponsored math contest. They are, left to right, Paul Davis of University High, Gere Nichols of Coronado High and Robert Siefert of Clairemont High.

Coronado Youth Scores Highest In 1967 Convair Math Contest

Gere Nichols of Coronado High School outscored more than 250 honors math students from 42 San Diego County high schools to take the sweepstakes trophy in the 10th annual Convair division-sponsored math contest this month.

Winners of $100 cash awards for highest scores in the three contest divisions were Nichols for county schools, Robert Siefert of Clairemont High for city schools and Paul Davis of University High for independent schools.

Trophies for highest scoring team in each division were awarded to University High, Pt. Loma High and Coronado High.

Members of the Coronado team received 14-karat gold pen and pencil sets for highest overall team score.

Dr. Clarence R. Gates of Jet Propulsion Laboratory was guest speaker at the awards banquet May 11 in the Hilton Inn.

The sweepstakes award was presented by Jack L. Bowers, Convair general manager; division trophies by Robert Heilbron, president of San Diego Mesa College; slide rule awards by Col. James R. Ourand, Defense Contract Administration Services plant representative, and certificates by Ray T. Blair Jr., assistant to the Convair general manager.

Sr. Thermodynamics Engineer Granted Convair Fellowship

Ola Brevig, a senior thermodynamics engineer in Dept. 584-0, has been awarded a Convair fellowship for doctoral studies at the University of Tennessee Space Institute at Tullahoma, Tenn.

His work toward a doctorate in mechanical engineering will be in the field of aerospace propulsion systems. In addition, he will serve as a graduate research assistant for the university.

A native of Norway, Brevig received his bachelor's at the University of Strathclyde, Scotland, where he studied under a Norwegian government scholarship, in 1956. He completed work toward his master's last year at San Diego State College.

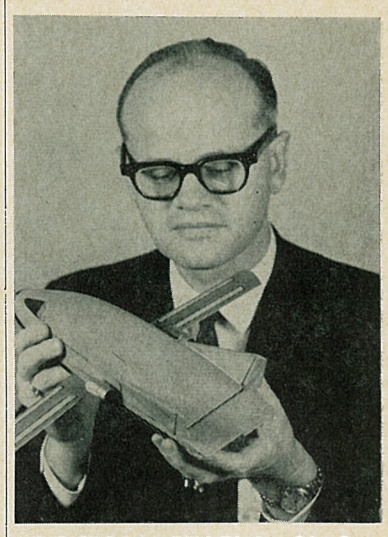
Brevig has been a Convair engineer eight years. He has worked on several conceptual propulsion system studies, including those for reusable boosters and maneuverable entry vehicles.

Brevig is a member of the American Institute of Aeronautics and Astronautics and the Norwegian Engineering Society. He will present a paper on "A comparison between the ejector ramjet and the ducted rocket" at the AIAA Third Propulsion Joint Specialist Conference in July in Washington, D.C.

Doctoral fellowship grants for four other Convair employes have been renewed.

Herbert Moskowitz is working toward his degree in operations management at UCLA. Working toward doctorates at UCSD are J. F. Ingber in engineering, P. L. Nunez III in aerospace engineering, and C. A. Miller in mathematics.

Employes receiving doctoral fellowships are granted educational leaves of absence. During the summer, they may either return to the Company for full-time employment or continue their studies.



DOCTORAL FELLOW—Ola Brevig, who has been awarded Convair fellowship for doctoral studies, looks over VL-3A re-entry spacecraft model.

46 Graduate From Course In Custodial Maintenance

Forty-six Dept. 250-4 janitorial employes at Convair's Kearny Mesa plant have been awarded Certificates of Recognition on completion of an intensive two-week custodial training program.

Sessions included classroom and workshop demonstrations. James McMinn and R. T. McMurray, both assistant foremen in Dept. 250-1, were in charge.

W. J. Stanley, manager of plant engineering, spoke at the opening session April 27 and at graduation exercises May 11. J. L. Petit, plant engineering general foreman, presented certificates.

Stanley commended janitorial staff members for improving job proficiency and said favorable comments received since start of the division's Clean Plant Program "indicate we're on the right track."

Typical of comments was a letter from Lt. Col. G. D. Fairbanks, Defense Contract Administration Services deputy plant representative.

"During the past five weeks DCASPRO personnel and visitors have commented on the cleanliness and excellent appearance of the offices and facilities of the DCASPRO, third floor of Bldg. 1," he said.

"Those responsible have every right to feel pride in their performance."

Petit said many of the janitorial personnel have expressed appreciation for the training and indicated it has resulted in improvement of their skills.

A similar training program for the janitorial staff at Lindbergh Field and Air Force Plant 19 will begin early next month.

Stanley reminded other employes of their "mutual responsibility" for helping keep plant areas clean.

"GRADUATION"—Typical of janitorial staff employes who recently received recognition certificates on completion of training program (left photo) were, from left, Lawrence Lee, T. L. Gutierrez, Beatrice Nash and Larry Herrera Jr. J. L. Petit, plant engineering foreman, presented certificates as W. J. Stanley, right, extended congratulations. Proper placement of paper towels in dispenser is demonstrated (center photo) by R. T. McMurray, assistant foreman, as group composed of, from left, J. T. Todd, Dorothy Bradley, Lee Grandberry and Milton Boyd, observe. Proper floor cleaning procedures are outlined (right photo) by James McMinn, assistant foreman, for, left to right, James Edwards, Herb Argrow (kneeling), Dale Graves, Virgil Foster, Grady Tryon and Otis Jones.

Instrument Society Plans Symposium

Aerospace engineers, scientists and managers from several countries are expected to attend the Instrument Society of America's Aerospace Instrumentation Symposium at Hotel del Coronado June 13 through 16.

A. D. Mardel, chief of Apollo mission support for NASA, will be keynote luncheon speaker.

Four Convair men have key roles in the symposium. Charles E. Wilson of Dept. 115-0 is general chairman, John A. Hughes of Dept. 950-1 is technical programs chairman, Harry N. Norton of Dept. 988-2 is vice chairman for planning and L. W. Schenke of Dept. 988-3 is proceedings editor.

John T. Bauer of General Atomic is president of the San Diego section of ISA. Richard K. Barnett of Stromberg-Carlson is symposium facilities chairman.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

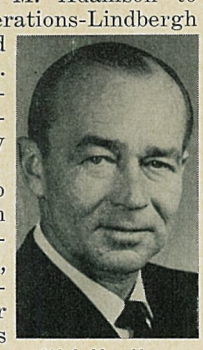
Vol. 20, No. 12 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, June 14, 1967

FAR NORTH FLIGHT—Parkas and padded coats were in order as passengers boarded Pacific Western's Convair 640 on inaugural flight from Edmonton to towns in Northwest Territory. J. B. Hurt, Convair 600 program manager, and W. C. Robinson, field service engineer, accompanied plane on two-day inauguration of service to Hay River, Yellowknife, Fort McMurray, Uranium City, Fort Smith, Peace River, Dawson Creek City.

Van Horn Appointed Operations Director

William L. Van Horn has been named director of operations for Convair division by Jack L. Bowers, division general manager.

Bowers also announced promotion of James M. Adamson to manager of operations-Lindbergh Field plant and of Robert G. Daly to manager of operations — Kearny Mesa plant.



W. L. Van Horn

Reporting to Van Horn, in addition to Adamson and Daly, are P. M. Prophett, director of aircraft sales and service; R. E. Bechtol, manager of facilities planning; W. J. Stanley, manager of plant engineering; and G. M. Barker, flight captain of aircraft flight operations.

Harvey E. Moose now reports directly to Bowers as director of material. R. H. Gilliland, manager of Lindbergh Field plant reliability control, reports to L. I. Medlock, director of reliability control.

Van Horn, a veteran of 27 years in the aerospace industry, has been Lindbergh Field plant operations manager since January, 1966. In his new position he replaces Elwood R. Bryant, who resigned effective June 5.

Van Horn joined Convair in 1950 in master scheduling, served briefly at Fort Worth, joined the former Astronautics division as project administrator in long-range planning in 1956 and became a department manager in 1958.

He took charge of the Atlas program in 1961, became vice president and program director for the Atlas weapons system in 1962 and was appointed works manager for the former Astronautics division in 1964.

A native of Andover, Wash., he attended Pomona Junior College and the University of Washington.

Adamson has been director of several programs at Lindbergh Field. A native of Salt Lake City and a graduate of the University of Utah, he has held numerous engineering assignments at Convair and has been manager of several aerospace programs since joining the Company in 1943.

Daly has been factory manager of Kearny Mesa plant fabrication, assembly and checkout. He has been with Convair 11 years, holding a variety of engineering and operations positions. A native of San Diego, he holds a bachelor's degree in physics from San Diego State College.

Reporting to Adamson are Mort Rosenbaum, director of aircraft programs; J. B. Hurt, program manager of Convair 600; R. W. Miller, program manager of C-5; W. R. Bruce, manager of

R. G. Daly

J. M. Adamson

administration and control; E. H. Damarus, manager of tooling; N. R. Keough, manager of experimental; and C. F. Blair, factory manager at Lindbergh Field.

Reporting to Daly are R. C. Lynch, program manager of MK-56 mines; W. D. Reed, manager of production engineering; F. D. Robbins, manager of production control; and F. B. Kemper, electronics manufacturing factory manager.

'ABRES Open House' Slated For Sunday At Vandenberg AFB

"ABRES Open House" is scheduled from 1 to 5 p.m., Sunday, June 18, at Vandenberg AFB with Convair division, associated contractors, and the 6595th Aerospace Test Wing as hosts.

E. J. Galbos, Convair chief of industrial relations at Vandenberg and chairman of the open house host committee, said 1,500 to 1,800 employes, family members, and friends are expected.

Six Atlas launch vehicles, Rocketdyne engines, and other associate contractor displays will be set up in Missile Assembly Bldg. 5. The ABRES B blockhouse and launch site will be open for inspection.

Refreshments will be served and 1,000 balloons with an "ABRES Open House" imprint will be distributed.

The open house is in part a "farewell" for Air Force crews scheduled to be phased out of the ABRES program by September.

Convair representatives on the host committee, in addition to Galbos, are Tony Estalio, George Shiroma, and Tony Valdivia.

CON-TRIB OKAYS $9,950 IN GRANTS

Members of the Convair Employes' Con-Trib-Club Committee in their June 1 meeting granted $1,200 to the United Jewish Federation for its annual fund raising campaign and approved an additional $1,000 grant for the local chapter of the American Cancer Society. (The club had given $7,500 to the Cancer Society in April for its annual fund raising campaign.)

Con-Trib also recently allocated $7,750 to 10 San Diego area organizations for summer camp for children from families unable to pay all or part of the camping program fees.

The organizations and amounts were Bayside Social Center, $900; Boy Scouts of America, $1,000; Campfire Girls, $200; Diabetes Association, $500; Girl Scouts of America, $600; Jewish Community Center, $350; Salvation Army, $1,200; San Diego City-County Camp Commission, $1,000; YMCA, $1,500, and Youth for Christ-Lifeline Ranch, $500.

Artificial Gravity Study Under Way For NASA

Convair division is conducting a 14-month study on feasibility of a centrifuge for providing artificial gravity for astronauts in orbit. The study is under a contract for approximately $180,000 from NASA Langley Research Center.

Part of NASA's Apollo Applications Program, the study will include detailed design of a ground-based test centrifuge and preparation of its test plan and design definition for the "flight hardware" centrifuge.

Rotated electrically, the centrifuge would be capable of providing variable gravity forces. It would be used in studies of detrimental effects of zero gravity exposure and would be housed in a pressurized module that would have environmental and life support systems for "shirt-sleeve" operations.

It may be linked with the Apollo and a modified Lunar Excursion Module (LEM) combination for launch by a Saturn 1B. Use of the centrifuge in the Saturn S-4B orbital "workshop" also is under consideration.

A crew access hatch would be provided between the LEM and the centrifuge module and a docking hatch would accommodate spacecraft for space-to-earth transportation in event of a mission abort.

Manned tests to be conducted in Convair's revolving space station simulator will aid in determining design.

The centrifuge study is under the direction of D. J. Jones, Convair manned space systems and Apollo experiments manager, with James E. Stumm of Dept. 532-0 as project engineer.

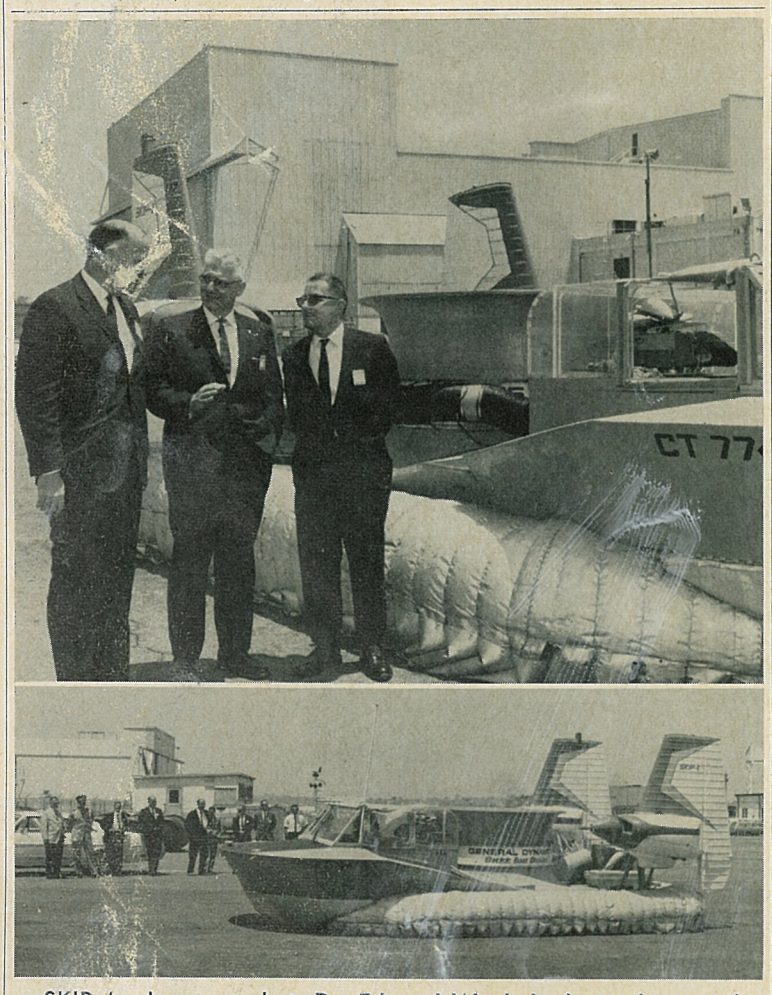
Bernard D. Newsom, PhD, will be principal investigator for experiment criteria and manned testing. Robert C. Armstrong, MD, chief of Convair's life sciences section, will head a technical review board.

Others with key roles in the study and areas of responsibility include Robert Saunders, mechanical design; Lee Browning, integration and centrifuge structure; Stratton Loucks, electrical and electronic communications control; Dan Chiarappa, dynamics; C. C. Love, thermodynamics and environmental control; Warren Johnson, life support; Ray McNamara, module structures; Bill Knapton, economics analysis; H. B. "Stutz" Sturtevant, reliability; Jack Youngs, weights; S. H. Myhre, stress; and William A. Shafer, MD, crew safety.

Julius Hertz Heads Materials Society

Julius Hertz, a design specialist in Convair's Dept. 572-1, has been elected chairman of the San Diego chapter of the Society of Aerospace Materials and Process Engineers (SAMPE). Harry Stone, a senior materials and process engineer in Dept. 572-4, was re-elected secretary.

Information on SAMPE membership and meetings can be obtained by calling Ken Carnahan, ext. 737 KM.



SKIP 1—In upper shot, Dr. Edward Wenk Jr. (center), executive secretary of National Council on Marine Resources and Engineering Development, and E. L. Dillon, program planning officer of Council (right), talk with V. T. Boatwright Jr., Electric Boat director of research and development, following rides in Electric Boat's surface effect vehicle, Skip 1, during Marine Technology Society Conference at San Diego.

Four Mgt. Club Scholars Named

Winners of the four Convair Management Club scholarships are Ruth Anne Gjerset, Nikki Joyce Perkovich, Robert George Spitzer, and Michael Alan Van Horne.

The four, all daughters and sons of Convair employes, were selected by judges following intensive interviews late last month. They were awarded scholarships of $500 apiece at a banquet in their honor last night, June 13, in the Bronze Room, La Mesa.

All are honor students and life members of the California Scholarship Federation. In addition to standing at the top of their classes throughout their high school years, all have been active in church, club, and student body groups.

Ruth Gjerset, 18, daughter of O. S. Gjerset, Dept. 954-2, was concert mistress of both the Point Loma High School orchestra and string ensemble and a member of the All-City High School Honors Orchestra. She will major in mathematics at the University of California at San Diego.

Nikki Perkovich, 18, daughter of Nick Perkovich, Dept. 001, is graduating from Escondido High School. She is a member of the American Field Service, Future Teachers of America and took

(Continued on Page 2)

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between June 1 and June 15.

Thirty-year: Dept. 020, C. Costantino; 031, F. J. Johnson, S. Kecskes Jr.; 041, W. M. Woolford.

Twenty-five-year: Dept. 031, W. Martin; 130, J. McLaughlen, E. W. Olson; 140, S. Teggart; 146, B. W. Paul; 566, C. C. Harness Jr.; 575, R. E. Strayer; 701, J. W. Hooker.

Twenty-year: Dept. 001, A. L. Davis; 002, R. Gamboa, C. A. Nelson; 015, G. J. Ellis; 019, Maria C. Frescas; 190, E. D. Heller; 250, S. J. Fortunato; 454, T. R. Cristoff; 512, H. B. Farrar; 715, C. M. Lomeli; 966, A. C. Ward.

Fifteen-year: Dept. 001, J. W. Hyland; 015, K. R. Thompson; 102, Rosemary B. Smith; 170, Evelyn B. Stanaker; 191, H. E. Wilson; 250, C. D. Moore; 400, C. D. Guest, H. R. Zagner; 401, J. E. Mullins; 420, H. A. Eaton; 460, Jo Ann R. Williams; 518, Margaret T. Cox; 519, R. H. Ries, Margaret B. Robinson; 554, R. C. Onstad; 581, R. A. Nau, J. R. Thayer; 756, T. I. Jaramillo; 833, R. J. Nickerson; 835, H. G. Thompson; 961, K. T. Younghusband; 962, D. J. Sullivan; 966, R. O. Barkdoll; 985, N. W. Miller.

Ten-year: Dept. 001, D. L. Kizziar; 015, B. W. Harris; 020, W. D. Prager; 027, R. D. Brown; 031, E. Umlauf; 057, D. F. Houtz; 059, E. H. Bilson; 101, J. L. Glover; 115, R. Woodle; 141, D. A. Davidson; 193, Mary W. Allan, E. Leep; 250, Jeannette G. Brown, S. W. Thomas; 400, E. L. Campbell; 454, J. V. Simanello; 506, S. T. Uyeda; 519, Anna M. Shaver; 731, H. H. Dickey; 733, P. M. Severy; 761, P. E. Grasmick; 764, E. A. Ulfers.

Dept. 780, F. Berry, R. P. Blouin, Mary E. Rumley, Juanita R. Woolstenhulme; 810, F. E. Ashley; 840, J. C. Hydle, L. A. Lare; 951, W. C. Wendt; 958, C. E. Burgi; 966, G. E. Wadleigh; 967, G. L. Tidwell; 969, C. J. Violette; 978, J. D. Bell Jr.; 979, G. S. Adams, L. J. Campbell, W. E. Cardinal Jr., C. O. Carpenter, J. L. Johns, I. D. Kuhn, P. A. Saluter, D. A. Schlandt; 985, R. G. Baird, E. Collins.

ELECTRONICS

Fifteen-year: Dept. 425, M. N. Delperdang; 581, Flora G. Garff.

Ten-year: Dept. 711, Marie K. Prida; 713, L. C. Cusick, L. O. Jones; 811, R. M. McIntyre Jr.

STROMBERG-CARLSON

Fifteen-year: Dept. 80-30, B. M. Leep.

Ten-year: Dept. 85-70, K. A. Kolozsvary.

Technical Papers

CONVAIR

GORDON—C. C., Dept. 507-0. "Experimental Operating Performance of 2 Stage Annular and Central Primary Jet Air Ejector." Supersonic Tunnel Association, Tullahoma, Tenn., May 8-9.

ROL — P. K., Dept. 596-0. "Ionic Scattering From Solid Surface (energy range 20-100 KeV)." ASTM Meeting on Mass Spectroscopy, Denver, Colo, May 14-19.

SHAFER—W. A., Dept. 592-0. "Non-Contact Physiological Sensing." ISA 5th National Biomedical Instrumentation Symposium, Albequerque, N. M., May 15-17.

SMITH—C. R., Dept. 587-1. "Factors to be Considered in Predicting Fatigue Damage in Full Scale Structures." Society for Experimental Stress Analysis, Ottawa, Canada, May 17-19.

SUTHERLAND—W. M., Dept. 572-3. "Stress Corrosion of Resistance Spotwelds in Type 301 Stainless Steel." AFML/Corrosion of Military and Aerospace Equipment Symposium, Denver, Colo., May 16-17.

YANG — C. T., Dept. 572-0. "Design of Surface Grinding Synamometers." ASME/Production Engineering Conference, Cleveland, Ohio., May 2-4.

YOSHIHARA—H., Dept. 596-0. "Numerical Experiments on Space Aerodynamics." 7th International Symposium on Space Technology and Science, Tokyo, Japan, May 15-20.

Papers presented at Society of Automotive Engineers' 1967 Space Technology Conference, Palo Alto, Calif., May 9-11:

KAREL—G., Dept. 581-1. "Near Term Reusable Rocket Launch Vehicle Concepts."

NAU—R. A., Dept. 581-5. "A Comparison of Fixed Wing Reusable Booster Concepts.

Papers presented at Society of Aeronautical Weight Engineers Annual Meeting, Boston, Mass., May 1:

BENSON—R. L., Dept 582-0. "Control of Aerospace Vehicle Costs by Applying the Proven Techniques of Weight Control.

HOOD—E. R., Dept. 588-3. "Weight Engineering—Aircraft vs. Automotive."

SEIDEN—E. I. and M. L. FRENCH, Dept. 588-3. "The VL-3A, A Manned Variable-Geometry Entry Vehicle for 1970-1980."

YOUNGS—Jack M., Dept. 588-3. "The Potential of a State of the Art Recoverable Launch Vehicle."

Retirements

CONVAIR

CARRERA—John A., Dept. 972-0. Seniority date Oct. 14, 1946, retired May 31.

DAVIS—Joseph J., Dept. 031-0. Seniority date Oct. 23, 1950, retired May 31.

DE VEER—Karel O., Dept. 059-3. Seniority date Aug. 3, 1949, retired May 31.

DUPREE—Cecil F., Dept. 001-0, Seniority date Feb. 20, 1948, retired May 31.

GARRITY—Charles R., Dept. 193-3. Seniority date Oct. 1, 1941, retired May 31.

HAAG—George C., Dept. 511-1. Seniority date May 13, 1952, retired May 31.

HAMMITT — James B., Dept. 130-1. Seniority date April 18, 1952, retired May 31.

HINDES — Whitney F., Dept. 031. Seniority date Sept. 16, 1940, retired May 31.

LAMBERT—Edward W., Dept. 818-1. Seniority date Jan. 28, 1957, retired April 28.

LEMIRE—Adrienne C., Dept. 016-0. Seniority date May 14, 1947, retired May 31.

LINT—Valentine V., Dept. 780. Seniority date May 23, 1951, retired May 21.

MABLEY—Lawrence H., Dept. 780-2. Seniority date April 4, 1948, retired May 31.

MASSEY — Everly K., Dept. 841-0. Seniority date March 19, 1957, retired May 31.

McGOWAN—Clarence E., Dept. 015-0. Seniority date Jan. 15, 1951, retired June 5.

PARKHURST — Dustin D., Dept. 143-2. Seniority date Aug. 10, 1950, retired June 5.

SIEBER—Aloysius, Dept. 832-2. Seniority date Dec. 22, 1950, retired May 31.

UGROB—Jack, Dept. 967-3. Seniority date May 28, 1956, retired May 31.

WILKINSON—David E., Dept. 024-0. Seniority date April 22, 1947, retired June 5.

Awards

CONVAIR

Employe Suggestion awards approved for the week of May 26.

Dept. 027-0, M. R. Brown, P. W. Byrd (six awards); 059-3, A. M. Brown, M. A. Herring; 130-1, J. B. Harrison; 143-1, J. J. Murphy; 250-1, A. R. Dyer; 250-2, S. C. Page; 401-1, C. H. Gladding; 454-0, R. A. Golem; 511-6, F. G. Schultz; 588-1, R. E. Johnston; 758-0, V. A. Bentley; 761-0, R. A. Deutschman, J. R. Teague; 831-0, S. Brecht, D. Passenheim, C. B. Ward; 835-5, J. G. Gonzalez; 860-0, E. R. Cash.

Employe Suggestion awards approved for the week ending June 2.

Dept. 001-0, L. J. Collis, W. O. MacRae; 002-0, E. Fountain (two awards); 015-0, M. Carmichael; 027-0, F. J. Serio (two awards); 141-2, W. J. Knox; 141-3, E. E. Franke; 142-1, C. L. Cheves, J. P. Flatley, T. L. Lamoureux; 143-1, J. S. Adams; 143-3, H. A. Jackson; 146-4, F. J. Bourgeois; 149-0, L. Brugger; 149-4, W. Golden; 170-1, S. Chester; 250-3, J. F. Galligan, G. A. Rusk; 250-4, G. J. Kleber Jr.; 410-0, J. G. Hickey; 566-3, W. W. Craft; 578-3, C. A. Young; 715-0, J. Friel; 744-0, K. W. Richey; 761-0, K. F. Cash; 764-0, R. E. Florez; 832-2, M. M. Tolner; 840-0, G. L. Cooper, M. F. Gonzales; 895, J. J. Olivarria; 953-3, L. B. Scott; 962-3, F. W. Anding; 987-0, D. R. Conk.

VANDENBERG AFB

Dept. 733-1, R. E. Reeves.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Kearny Mesa, ext. 1931, Bldg. 17, Room 7. 8 a.m., Monday, June 19. Lindbergh Field, ext. 491, Bldg. 14 auditorium. 8 a.m. and 4:30 p.m., Tuesday, June 20. AF Plant 19, ext. 491 LF. Bldg. 3 Conference Room. 8 a.m., Friday. June 23.

SD CITY COLLEGE

BLUEPRINT READING — 40 hrs., (20 hrs. lecture, 20 hrs. workshop). 4-6:30 p.m., twice a week. Starts week of June 26. For information contact Hal Rubin, ext. 1931 KM.

U. OF CALIF. EXTENSION

Individuals participating in the current University of California Extension certificate program for professional designation and senior award in Business Systems Management please contact Don Olsen, educational services, ext. 1931 KM.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Personals

CONVAIR

My mother and I wish to thank Convair friends, both Kearny Mesa and Lindbergh Field, for their thoughtfulness and contributions to the Cancer Fund at the death of our husband and father, Ray W. Calvert, retired from Dept. 731.

Dale Calvert
Dept. 400-3

* * *

Your kind expressions of sympathy following the death of Joseph E. Wood (retired 1961) are deeply appreciated and gratefully acknowledged.

Grace Wood and family

Invention Disclosures

CONVAIR

CAMPBELL—M. D., Dept. 572-1. Removal of Superficial Cracks in Fused Glass Electrical Connector Headers.

HAMMER—U., Dept 586-0. Fluidic Proportional Vehicle Control System.

HANNAY—P. M., Dept. 562-2. Fastener Recess-High Torqueing Capability.

HANNAY — P. M., Dept. 562-2. Wrenching Means — High Torqueing Capability.

OGLE—C. M., Dept. 491-0. Dynacushion.

ROSCIESZEWSKI—J. J., Dept. 596-0. Electrogasdynamic Generator.

RUTTAN—E. B., Dept. 511-2. Venier Line Spacer.

SCHULTZ—F. G., Dept. 511-6. Fastener Locating Template.

SMITH—C. R., Dept. 587-1. Post Yield Interference Bushing.

WRENCH—E. H., Dept. 581-1. Reduction of Thermal Distortions in Structures.

Deaths

CONVAIR

MARTIN—Earl L., Dept. 731-0. Died May 26. Survived by wife, Zella M.

SHRIVER—John E., Dept. 957-2. Died May 18. Survived by wife, Evangeline R.

Lost & Found

LOST—Gold tie tack with Austrian Empire emblem. Reward for return to Bob Emerson, ext. 2335 KM

Births

CONVAIR

DOHM—Son, Rodger Matthew, 8 lbs., 2½ oz., born June 2, to Mr. and Mrs. Frank Dohm, Dept. 588-1.

Rider-Driver

RIDE WANTED—From Cowles Mt., San Carlos area, to Lindbergh Field plant. 7-3:30 shift. Glenn Ritchie, home phone 465-9442.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N.Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

TOP SCHOLARS—Convair Management Club President Larry Sweeney hands certificates to scholarship winners, from left, Michael Van Horne, Ruth Gjerset, Nikki Perkovich, Robert Spitzer. At far right is Mark Saunders Jr., chairman of Management Club scholarship committee.

Industrial Relations Leads 'Good Housekeeping Survey'

Industrial relations took top departmental honors in Convair division's Clean Plant Program "good housekeeping survey" for May with lowest penalty point average of .048.

The finance department was second at .053 and Lindbergh Field operations third with .060. The average is determined by dividing total number of penalty points for the department by number of employes.

Other departments, in order of standing, were Kearny Mesa operations, military space programs, reliability control, research and engineering and launch vehicle programs.

"Considerable improvement in good housekeeping practices were evident in all plant areas in the May inspection," John P. Hopman, Clean Plant Program manager, said. "But there is still much room for improvement."

Jack W. Garrison, chief safety engineer and chairman of the survey team, pointed out that even greater improvement was achieved than was evident from departmental standings since a more stringent inspection and penalty point system was used in the May division-wide audit and evaluation.

"For example, in April we listed only one penalty point for dusty file cabinets in each area," he said. "Now one point is assessed for every two found dusty. Eighteen penalty points were assessed for dusty file cabinets in one area alone."

Hopman and Garrison recommend use of paper cloths for regular daily or every-other-day dusting of file cabinets and other surfaces. "It takes only a minute or two if done regularly," Garrison commented.

The paper cloths are less expensive than cheesecloth and may be wrapped around a brush or ruler for dusting hard-to-reach surfaces and may be washed out and reused several times.

They may be ordered as WIP 1500-10 on in-plant commercial stores requisition form A4003.

Garrison said "big inroads have been made" in removal of unsightly material from work area walls although such material still accounted for the highest number of penalty points in the May survey. Dusty cabinets and equipment was second with insight storage of lunches, thermos bottles and purses third.

Major emphasis is being placed on need for purging unnecessary paper from file cabinets.

"This is an area where assistance is needed from every employe responsible for files," he said.

In other aspects of the Clean Plant Program, several work areas at Lindbergh Field including purchasing, ocean data station programs and A-X aircraft proposal areas on the second floor of Bldg. 5 recently have been refurbished and repainted.

Refurbishment of several other engineering and administrative areas by plant engineering personnel is now under way.

"Not all areas can be refurbished immediately," Hopman said. "We are proceeding in accordance with a master plan."

ETR Mgt. Club Elects Mazza as President

John Mazza will be installed as president of the Convair Eastern Test Range Management Association, succeeding Tom Phillipp, at a "Wives Night" meeting tomorrow (June 15) in Ramada Inn at Cocoa Beach.

Other new officers are Linn Leitner, first vice president; Ken Taylor, second vice president; Mary Southwick, secretary, and Guy Cruselle, treasurer.

Board of control members are William Apfel, Robert Arpin, John Boerlin, Charles "Jack" Jackman, John Kechele, Joe Littlefield, Jerry Pruitt, Jim Simms and B. J. Griffin.

Electronics-SD Club Installs Officers

E. R. Peters was installed last night (June 13) as president of the Electronics-SD Management Club in ceremonies at Bali Hai Restaurant on Shelter Island.

Peters, who succeeds R. W. Perrin, served as first vice president last year.

Other new officers seated by John Patton, NMA director, Zone A, were H. L. Copeland, first vice president; R. E. Fixsen, second vice president; Vicki Allen, treasurer; Juan Green, secretary.

R. H. Nicholson was chosen new three-year board of control member.

Officers assume their responsibilities as of July 1.

Blueprint Reading Classes Will Begin

Convair's educational services section, in conjunction with San Diego City College, will offer elementary blueprint reading classes from 4 to 6:30 p.m. twice weekly beginning the week of June 26.

The 40-hour course, taught by Hal Rubin, will include 20 hours of lecture and 20 hours of workshop sessions. Cost will be less than $3 for textbook and student body fee.

Information can be obtained by calling Rubin at ext. 1931 KM.

Four Mgt. Club Scholars Named

(Continued from Page 1)

part in the Project Head Start volunteer program last summer. She will enter Palomar College this fall and intends to transfer to San Diego State next year. She has selected sociology as her major field.

Robert Spitzer, 18, is the son of George Spitzer, Dept. 145-1. He is graduating from La Jolla High School. He was class valedictorian and Associated Student Body president. He lists photography, jazz, scuba diving among his hobbies and has been active in such school sports as track and wrestling. He will major in political science at UCLA.

Michael Van Horne, who marked his 17th birthday last week, attended Crawford High School. His father is Alan Van Horne, Dept. 400 supervisor. Michael was a member of the Student Affairs Committee, Letterman's Club, Key Club, Explorer Post 228 Oceanography and Post 224 Data Processing. He will major in physics at UCSD.

Al Reiter Low, Shoots a 72

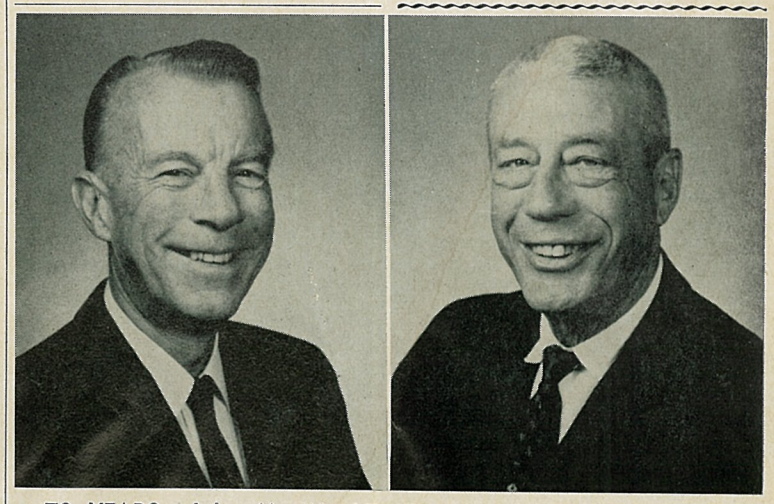
Al Reiter of Convair's Dept. 015 shot a 72 to take low gross honors in the CRA golf tournament June 4 and 5 at Chula Vista municipal links.

Other winners in the 0-14 handicap flight and their totals were Ralph Way (81), second low gross; Ken Eastin (67), first low net, and Frank Kany (69) second low net.

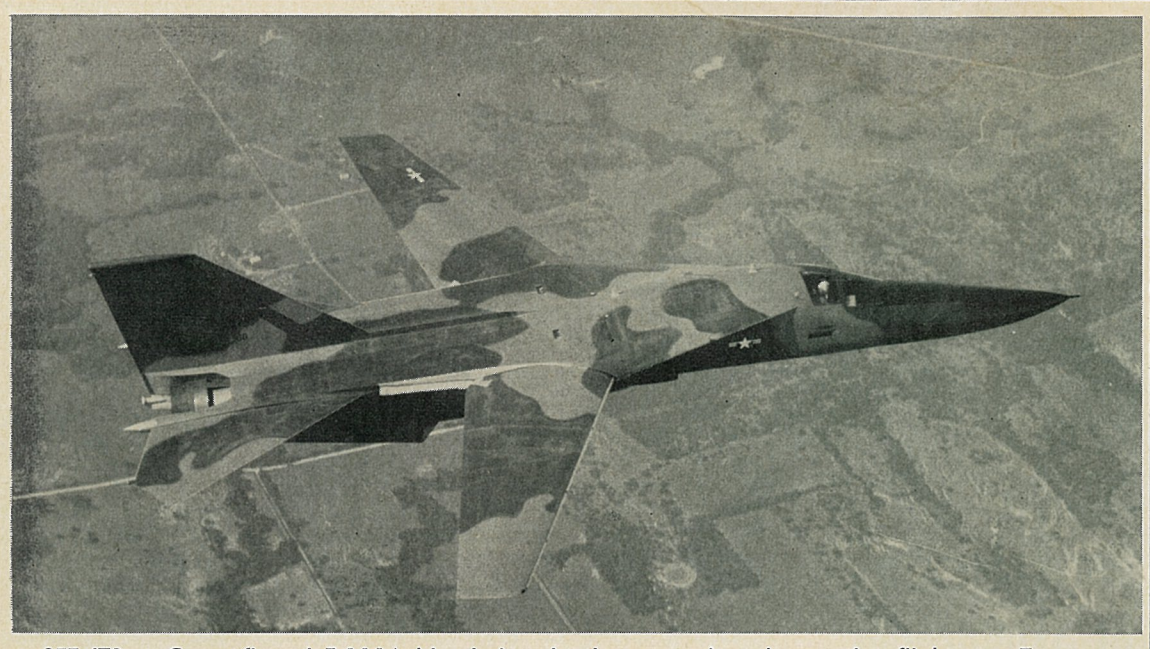
Winners in the 15-23 handicap flight were Dick Torrence (83), first low gross; Terry Kell (88), second low gross; Al Van Horn (73), first low net, and C. Lind (74), second low net.

Top men in the 24 and over handicap flight were V. Maurinac (92), and May Walden (92), tied for low gross; Bill Silineck (66), first low net, and S. Brown (73), second low net.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!



70 YEARS—John M. "Jack" Kline, left, general foreman of fabrication (Dept. 710-0) at Kearny Mesa, and John P. Hopman, assistant to the director of operations (Dept. 200-0) recently have been awarded pins for 35 years of service.



SEE IT? — Camouflaged F-111A blends into landscape as it makes routine flight over Texas.

Surplus Centaur Tank Modified For Space Propulsion Testing

A surplus Centaur tank has been modified extensively by Convair division and delivered to the Air Force Rocket Propulsion Laboratory (AFRPL) at Edwards AFB for use in tests in a large space propulsion environmental (vacuum) chamber.

William A. Roberts, project leader for Convair, said the tank was modified to increase its capability for "in-space" storage of cryogenic propellant.

"Results of the AFRPL thermal performance tests may result in further extension of the usefulness and applicability of Centaur vehicles for long-duration missions of the future," he said.

The tank was partitioned into three sections with installation of an additional internal liquid hydrogen bulkhead and was shortened to permit its placement in the environmental chamber.

Forward and aft fiber glass adapters, aluminized mylar superinsulation, insulation cover plates, instrumentation and new propellant fill and vent lines also were added.

Roberts said the tank will be suspended from its forward adapter inside the altitude chamber during tanking and testing. It will be tanked with approximately 1,800 pounds of liquid hydrogen and 18,500 pounds of liquid nitrogen for the tests.

Convair also provided thermodynamics analysis, stress analysis and functional limitation reports and test plans for the Air Force under the $148,981 fixed-price contract.

Robert Bruce of Dept. 403-3 developed the manufacturing plan for the tank modification, Robert Welk of Dept. 758-0 was responsible for fabrication and final assembly and Paul Kaneyuki of Dept. 454-0 was in charge of fabrication of adapters.

Structural design engineering was by Ray Stoker and Clay Rathbun of Dept. 961-8, stress analysis by Robert Carlson of Dept. 966-4 and thermodynamics analysis by R. W. Jennings of Dept. 966-3. E. D. Wilson of Dept. 957-0 was responsible for quality control.

Price Tag Display Emphasizes Cost of Titanium Fasteners

Titanium fasteners cost money —lots of it—and Convair assemblers using them in their work on C-5 empennages are seeing the price tags every time they get a new supply.

Eight large carts containing all the various sizes and types of titanium Hi-Lok fasteners which replace rivets in assembly of C-5 components have been spotted at convenient locations in the Lindbergh Field production area.

And, every time one of the carts is opened, signs on the lids shout the high cost of the fasteners. The fasteners range in cost from $1 to $7. Over $40,000 worth of fasteners is used in assembly of each C-5 empennage!

"We want every C-5 worker to know and to think about the cost of these fasteners and be careful of every single one," E. D. Robinson, general foreman in charge of C-5 empennage production, said.

"When a fastener is dropped, we want it picked up. One fastener kicked under the fixture and swept into the trash is money thrown away."

Although containers are positioned in the working areas for greatest convenience, no one except assistant foremen or Harold Easter, supervisor of production control and stores, may open them to issue the fasteners to workmen.

HIGH PRICE TAG—Wanda Scales of Convair Dept. 059-7 holds titanium fastener worth $7 to be used in C-5 empennage assembly. New containers point out high cost of small items.

Management Key To Advances Beyond Apollo

Management lessons of the past and their application to the future were discussed this week by Jack L. Bowers, Convair general manager, in an address at the 1967 National Technical Symposium of the American Astronautical Society in Huntsville, Ala.

Bowers said creative knowledge and skills needed for tomorrow's hardware—beyond Apollo —are already being developed.

"The key to bringing the aerospace effort to its present state, and the key to its future successes, lies not only in planning and technology—but very heavily in management," he said.

"Everything that happens in our business is the result of management, good or bad, and our skills in this area will determine just how far we go in space."

Bowers said he is highly encouraged by recent emergence of specific plans for Apollo applications. "I firmly believe we can look forward to an era when the nation will receive full return for its investment in Mercury, Gemini and Apollo," he said. "Programs just around the corner appear to have great promise."

The Convair general manager reviewed the history, flight record and future plans for Atlas and Centaur briefly and expressed the opinion today's technology can support a recoverable booster, with upper stages, capable of lofting 30,000 to 45,000 pounds.

E. J. Reid Will Chair Advisory Board

Edward J. Reid of Convair's Parts Data Center and Communications System has been named to the 14-member Contractor Advisory Board of the Interagency Data Exchange Program (IDEP) and will serve as chairman of its Data Retrieval Committee.

The board supports contractor representatives in IDEP — an Air Force, Army, Navy and NASA-chartered program providing interchange of test data for more than 200 military and contractor organizations.

Engineer-Aviator Featured on NBC

Arnold D. Senterfitt, an engineer in Convair's flight controls Dept. 551-2, and his wife, Patricia, appeared on the "Today" program on NBC television May 24 in a filmed interview on work of the Flying Samaritans.

F-111 Flight Hours Continue to Climb

Air Force and Navy versions of the F-111 had accumulated nearly 3,500 hours of flight early in June.

F-111As logged most of the hours — nearly 2,980 on 1,668 sorties. Supersonic speed was reached on 567 of these flights.

Navy F-111Bs had over 488 hours of flight on 319 missions with supersonic speed attained on 71 missions.

BEAUTY—Look who's inspecting F-111 — Kay Forrest, "Miss New Zealand." She was recent guest at Edwards AFB, Calif.

Electronics Fabricating New Types of Radomes

Qualification tests have been completed on an advanced type of fiber glass radome designed and developed by Electronics-San Diego for a data link system. The radome is mounted on an aircraft pod.

The development task was subcontracted to Electronics-SD by Hughes Aircraft Co.

Electronics is fabricating two types of radomes, one for the after portion of the pod, the other for the forward. The aft radome is made of honeycomb core sandwich material. The forward units are of a solid layup type. Both are 17 inches in diameter. The aft radome is 17 inches long, the forward, 26 inches.

One aft radome, slated for preliminary flight test, was delivered on schedule at the end of February. All of the current order are to be delivered by November of this year.

Design and fabrication of the aft radome, particularly, presented unusual problems in meeting aerodynamic requirements and required the use of a female mold.

Also, since the radomes will be subjected to extremely high speeds in flight, loading during checkouts reached two tons on the forward article and 1,200 pounds on the aft unit.

So far, testing has been completed for pressure, structural, vibration, altitude. Weathering and shock tests were last of the series.

Convair structural test laboratory accomplished structural checkouts. Shock testing was done by Convair at its Kearny Mesa plant. The balance of the tests were done in the Electronics-SD test laboratory.

"We feel that there is a wide potential in development and fabrication of radomes of this nature," G. P. Tricoles, project engineer, stated.

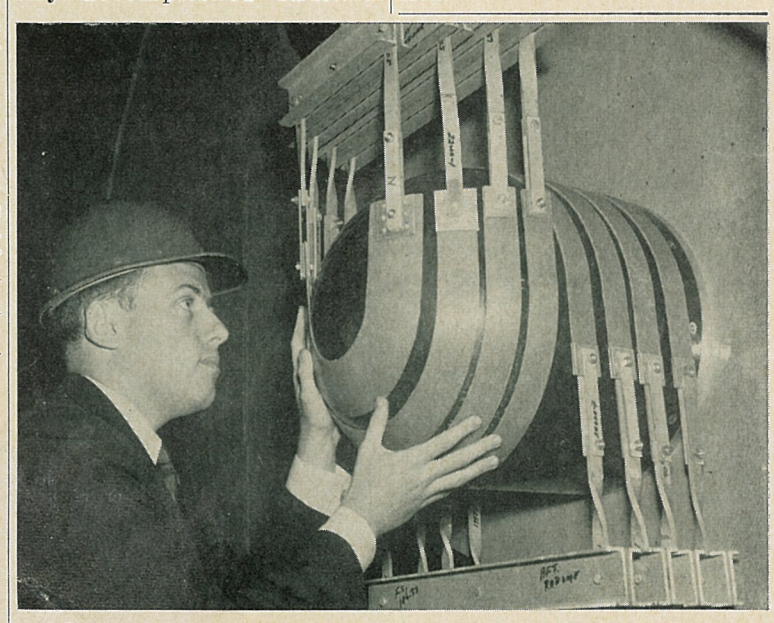
Robert Grove, senior design engineer, is responsible for mechanical design and development of fabrication processes. Tom Fiscus, electrical design engineer, is in charge of design and electrical testing, and R. J. Hogan is plastics fabrication supervisor.

Papers Delivered At Marine Meeting

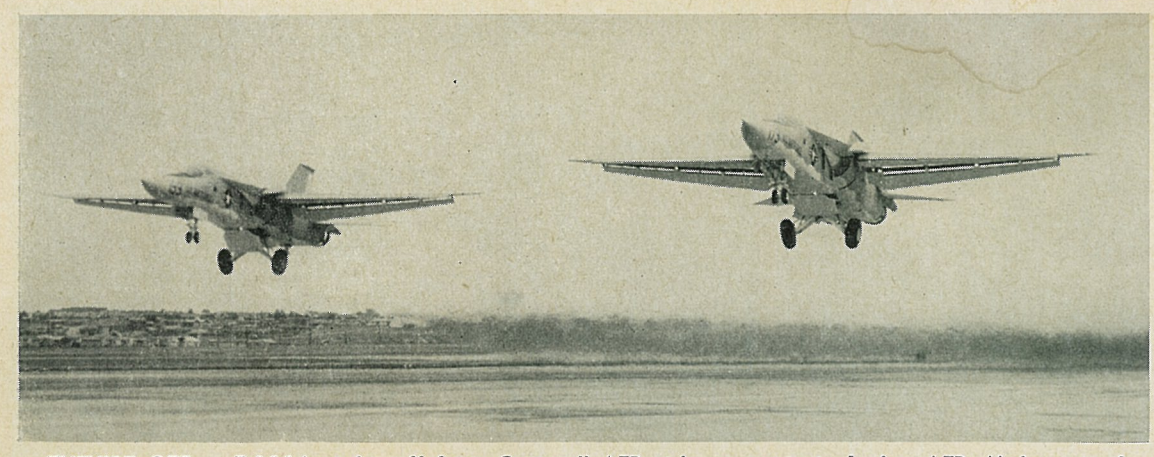
General Dynamics men from Electric Boat and General Atomic divisions delivered papers at the third annual Marine Technology Society conference in San Diego, Calif., last week, June 5-7.

S. P. Steinhour of Electric Boat spoke on "Fishing Resources Development in Connecticut and the Law" during the session on state aspects of marine technology. C. P. Brancart and G. H. Hoffman, also of Electric Boat, gave a paper on "Star II— A Second Generation Research Submarine" during the deep submergence session.

Dr. P. H. Miller Jr. of General Atomic was chairman of the materials and power sources session.



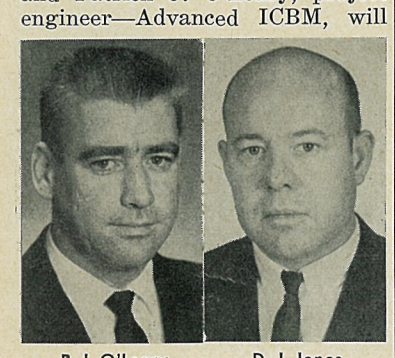
LOADING—Bruce Steinberg, Convair structures lab test engineer, checks test setup for simulating flight loads on fiber glass radome, developed by Electronics-SD for Hughes Aircraft Co. Whiffle trees are attached by fiber glass straps to avoid damage to radome.



THEY'RE OFF — F-111As take off from Carswell AFB strip en route to Loring AFB, Maine, starting point for their trans-Atlantic flights to Paris and Wethersfield Air Station, England.

Jones, O'Leary to Participate In 8-Week Executive Program

David J. Jones Jr., advanced program manager-manned space vehicles and Apollo experiments, and Patrick J. O'Leary, project engineer—Advanced ICBM, will



P. J. O'Leary D. J. Jones

participate in the 16th annual Stanford Executive Program, June 25 to Aug. 17, on the Stanford campus.

Jack L. Bowers, Convair general manager, said their selection is part of Convair's continuing Management Upgrade program.

O'Leary and Jones will face eight full weeks of classes and seminars. Subjects to be covered include "business policy," "behavioral science for management," "management controls and quantitative methods," "financial management," "marketing management," "business-government and the market system" and "the economic system."

Some 850 executives from more than 270 companies and business organizations, representing the United States and 26 foreign countries, have participated in the program since its founding in 1952.

Mgt. Club to Install Officers June 19

Convair Management Club members — new and old — will learn more about the organization and see new officers installed at the June 19 meeting, Bronze Room Restaurant, La Mesa.

Officers for the 1967-68 term will be installed by John Patton, National Management Association director, Zone A.

A no-host cocktail hour will start at 6 p.m., followed by roast beef dinner at 7 and program at 8.

The meeting has been arranged primarily as a new member indoctrination. Past and new presidents, Larry Sweeney and Arch Rambeau, will talk, as will Gerry Schmidt, program chairman, and Robert Montague, education chairman.

Tickets at $2 each now are on sale by club Boosters.

'Service Parts' Now 'Support Contracts'

The name of Convair's Dept. 113-0, formerly "service parts," was changed to "support contracts" effective June 1 to more clearly reflect services performed.

C. W. Blakey, director of contracts, said work of the department is essentially contractual in nature and in support of aircraft programs.

John Doig is manager. Reporting to him are W. T. Elliott, assistant to manager-support contracts; F. J. Kennie, chief of government support contracts; J. W. Ensign Jr., chief of sales control and records administration; and L. J. Hayes, chief of commercial support contracts.

Salvage Schedule

Next sales day, Lindbergh Field salvage yard: June 24.

Cruiser and Camper Are up For Sale

Convair surplus material sales offices are accepting bids for sale of a CRA-owned 16-foot cabin cruiser and an eight-foot Alaskan camper.

The fiber glass cabin cruiser is equipped with a four-cylinder engine and a trailer. The camper is in excellent condition, raises and lowers hydraulically and is equipped with a gas refrigerator and three-burner stove and oven. Both can be seen at the Kearny Mesa salvage yard.

Bid forms may be obtained by calling the sales offices, ext. 1773 or 1873 KM or ext. 754 or 1609 LF. Bids will be opened at 1:30 p.m. June 21.

'Youth Toastmaster' Program Planned

Dynamic Toastmasters Club No. 457 will sponsor a "youth leadership" program for junior high school students from 6:15 to 8:15 p.m. Tuesdays from June 27 through Aug. 22 in CRA Clubhouse.

Ezra Johnson, Club 457 president, said teenagers will "learn by doing" as they elect officers, conduct business, discuss "table topics," hold speech contests and evaluate their own meetings.

The program will be limited to 25 and there will be no charge. Children of General Dynamics employes may register by calling CRA Clubhouse, ext. 1111 KM, or Johnson at his home, 277-0067.

Johnson, Ray Sodomka and Cy Campbell will serve as adult coordinators.

Investment Seminar Sessions Continue

Convair Management Club members are invited to attend four remaining sessions in an investment seminar being presented by the club's education committee from 5 to 6:30 p.m. Thursdays in CRA Clubhouse auditorium.

Robert A. Bowden of Hornblower & Weeks-Hemphill, Noyes will be speaking tomorrow (June 15).

Philip de Roulet of Hayden, Stone Inc. will begin a three-week series of "stock market strategy" presentations June 22.

Convair Man Named For Radio Honors

Harvey Mondy, second-shift leadman in sheet metal at the Convair Lindbergh Field plant, was pointed up as "Businessman of the Day" by KSDO radio last week, June 6. The daily program honors a person who has distinguished himself within the business community.

Mondy was recommended by his friends for his many years of work as agricultural superintendent of the Eastern San Diego County Fair at El Cajon and for his activities with the Future Farmers of America.

Six Take Part In Symposium

Six General Dynamics men from Fort Worth and Convair divisions are participating in the national Aerospace Instrumentation Symposium sponsored by the Instrument Society of America this week at Hotel del Coronado in San Diego.

Walter J. Gabriel of Fort Worth division is chairman of the workshop session on Instrument Reliability Problems and W. H. Hites, also of Fort Worth, is on the panel of the session on Managing an Instrumentation Program.

John A. Hughes of Convair, chaired the session on Instrumentation's Role in Systems Reliability yesterday. John Q. A. Wickham, Convair, gave a paper, "Transducer Failure Effects on Vehicle Operations." R. S. French presented "Rater and Logit: A New Approach to Crew Performance Assessment."

G. D. Boyce will speak on "Improving Confidence in Time-Sampled Measurements" tomorrow and be a member of the panel at the workshop session, Product Forum—Data Conditioning and Display Equipment. He will give a brief talk on "Direct-Reading Digital Deviation Meter."

Good-Looking Models Promised Photogs

Convair shutter bugs will shoot at two good-looking models, wearing the latest mod fashions, at next Sunday's (June 18) Camera Club session in the Photo Arts Bldg., Balboa Park, 8 p.m.

Arlene Smith, daughter of Mickie Sizmour, Dept. 101-2, and Sue Fountain will pose for two set-ups, one with flood lights and one for electronic flash. Model fee for non-members is $1.

Tonight, June 14, Al Berger will take members on a tour of the darkroom facilities at CRA Clubhouse, Kearny Mesa. Anyone interested in attending should call Al Oehler, ext. 1724 LF.

Convair Wives Plan Luncheon at Bahia

Convair Wives will hold their monthly luncheon at the Bahia, Mission Bay, next Wednesday, June 21.

Reservations must be made by noon this Friday, June 16, with Mrs. Nolan Loftin, 276-4270, or Mrs. Willard Ohland, 442-5714.

Mrs. Ohland and Mrs. Daniel Chiarappa, as hostesses, promise a surprise program. Social hour begins at 11 a.m., followed by a noon luncheon. Cost is $2.40, including tax and tip.

The club's regular potluck will be June 28, following a 10 a.m. board meeting in the CRA Clubhouse. The afternoon will be devoted to craft sessions.

NEW RETIREMENT BOOKLETS OUT

New retirement plan booklets for Convair hourly and salaried employes are available upon request at employe services offices at Kearny Mesa and Lindbergh Field.

Quick Reaction Laboratory Wins Electronics—SD Honors

Quick Reaction Capability laboratory has won Electronics-SD honors for error-free work for the second time. The lab was the first department to win the Zero Defects award when the program was begun at the San Diego operations the latter part of 1965.

QRC lab topped Electronics-SD's seven production areas with an average of 5.1 defects per 100 manhours over a period of three months to qualify for the quarterly Zero Defects banner presented May 24.

D. C. Prim, general manager, said that the standing was particularly significant since the 36 technicians in QRC lab work under difficult conditions. The lab, which produces short-run orders, must research and develop and produce simultaneously. Technicians often must work to sketches when released drawings are not available and must build up electronic equipment while design changes are still being incorporated.

The lab produces engineering models and one-of-a-kind electronic assemblies for NASA, Air Force, and Navy programs.

In San Diego for the Zero Defects presentation was P. I. Harr, Corporate director of reliability, quality control, and value control.

R. H. Nicholson, Electronics-SD manager of quality control, heads the Zero Defects committee. Other members are D. V. Hill, supervisor of quality assurance; William Doroshuk, manufacturing operations; Otto Barksdale, program planning; Juan Green, engineering; Jack Larson, controller's department.

Next departmental award will be made in August.

REPEATERS—Quick Reaction Capability lab technicians receive cigars and candy from Electronics-SD General Manager D. C. Prim for winning quarterly Zero Defects honors for second time. QRC Foreman George Varney accepts for department. Others at presentation, in foreground from left, are R. H. Nicholson, Electronics-SD manager of quality control; Phil I. Harr, Corporate director of reliability control; and W. J. Hemmer, Electronics-SD, manager of operations, at right.

MAXIMUM AWARD—Employe Suggestion Award check for $5,000 is presented to Thomas K. Bishop, right, senior buyer in Convair Dept. 810-0, by G. W. Zahrte, manager of procurement at Kearny Mesa. Suggestion, expected to save $54,188 annually, involves eliminating special packaging requirements in certain types of hardware.

CON-TRIB ASSIST—George Leesch (second from right), Electronics-SD manager of industrial relations, hands check from SD operations Con-Trib-Club to T. G. Atkinson, treasurer of Home of Guiding Hands. Others are Frank Bell, Home's community relations director, at left, and Ray Trent, Electronics-SD Con-Trib committee member, at right. Electronics-SD employes contributed $2,500 this year and $2,000 in 1966.

Sports & Recreation

Bicycle Club Will Combine Camping and Mountain Rides

Convair Bicycle Club members and their families will combine two nights of camping at CRA's 90-acre Pine Crest resort in the Cuyamaca Mountains with a series of cycle rides and a catered chicken dinner during a "Mountain Cook-out" June 23-25.

Families will set up camp Friday evening (June 23). Pine Crest is located three miles southeast of Julian on Highway 79.

Cycle tours will be made through Cuyamaca Rancho, to Julian and Pine Hills on Saturday and along Sunrise Highway to Pioneer Mail Park on Sunday.

Chicken dinners will be served at 6 p.m. Saturday at a cost of $1.50 for adults and $1 for children.

Other meals will be prepared by each family on charcoal grills at individual camp sites. There will be a $2 charge for each family for use of facilities.

Reservations can be made by calling Myke Dickey, club president, at ext. 3207 KM or (home) 279-2442.

Mexico Orientation Sessions Beginning Tomorrow Night, 7 p.m.

A pictorial showing of highlights of Mexico is set for tomorrow night, June 15, for all General Dynamics people interested in the coming CRA-sponsored 16-day trip below the border.

The slide presentation of an actual GD tour, covering the same itinerary, is set for 7 p.m. in the Convair executive dining room, Lindbergh Field.

First session of the CRA Spanish course, especially for tourists, will follow the slide showing. The capsule course will be taught for eight weeks by Jim Hardison of Convair, conductor of the semi-annual trips to Mexico City and Acapulco.

Total price for transportation, hotel accommodations, admissions, and principal meals is $385 per person. For information call CRA office, ext. 1111, Kearny Mesa, or Hardison at his home phone, 276-5805.

California Ranger Will Show Slides Of Cuyamaca Park

Hiking and riding trails in the Cuyamaca Park area will be described at an open meeting of the Convair Riding Club this evening, June 14, in CRA auditorium, Kearny Mesa.

Lyle A. Watson, state ranger, will show slides of the trails.

The public is invited to the 8:15 p.m. program which will follow a short business meeting of the club at 7:30.

Riders will hold an all-equitation show this Sunday, June 18, at the CRA horse ring. First class will start at 8:30 a.m. Entry fee is 50 cents for members, 75 cents for non-members.

Ken Morgan Winner In Air Competition

Ken Morgan of Electronics-SD flew a round-robin course to within 3 minutes of estimated time for a Bonanza in Bonair Flyers' first such competition.

Thirteen competed in four planes over an air route starting at Montgomery Field and going by Julian, Hemet, Fallbrook, Oceanside, Ramona, and back to the starting point, on Saturday, May 20.

Morgan's navigator was Julian Forcier.

Carolyn Buman and Mel Trabold in a Twin Comanche won best fuel consumption.

Adventurers Slate Baja California Trip

CRA Adventurers will drive to Punta Cabras, Baja California, about 100 miles south of the border, for overnight camping and a hike June 24-25.

Those making the trip may obtain visitor permits from the Mexican Consulate in San Diego and purchase of short-term Mexican auto insurance is suggested. John Smaldino will be trip leader.

Films on "Adventures with Four-Wheel Drive Vehicles" and "Survival in the Desert" will be shown at the Adventurers monthly meeting June 21, 7:30 p.m., CRA Clubhouse auditorium.

Bargain Tickets

(Following are bargain-rate tickets currently available to employes, Unless otherwise stated, they are offered at employe services offices of Convair, Stromberg-Carlson, Electronics-SD, Bldg. 51 engineering mailroom, Lindbergh Field, H. C. Medearis' office at AF Plant 19, and CRA Clubhouse.)

★ ★ ★

Exchange coupons for Circle Arts Theatre allows $1 off regular prices. "Arsenic & Old Lace," June 20-July 2; "Generation," July 4-16. Coupons at employe services outlets.

* * *

Starlight Civic Light Opera tickets for "Finian's Rainbow," July 8, "Oliver," Aug. 12, and "Gypsy," Sept. 2 are on sale at $1 saving at KM and LF employe services.

* * *

San Diego County Fair, June 23-July 4, Del Mar. Tickets $1 for adults; 25 cents for children.

On Sale:

Six books on early San Diego area history are on sale at $7 each—a 30 per cent discount—at employe services outlets. They are "The Explorers," "The Glory Years," "Time of the Bells," "Gold in the Sun" and "The Silver Dons" by Richard Pourade and "American Hunters of the Far West" by Malcolm J. Rogers.

* * *

Also available are Convair monogrammed pen and pencil sets at $1 each, Convair monogrammed money clips at 50 cents each, Convair monogrammed cigarette lighters at $3 each, Convair monogrammed pocket knives at $5 each, wrist calendars at $1.04 each, and Convair monogrammed key chains at 75 cents each.

Anglers Schedule Henshaw Weeekend

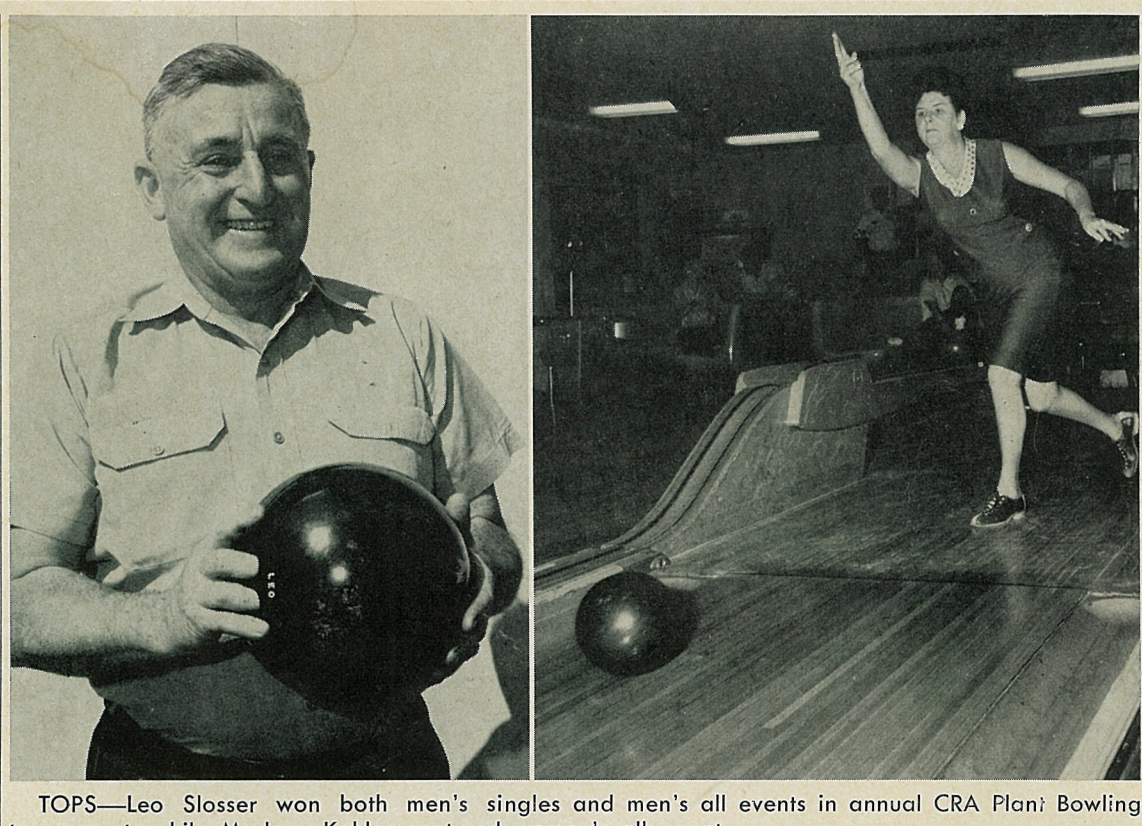
CRA Fishing Club plans a fishing derby June 24-25 at Lake Henshaw.

Saturday's catch will go into the skillet for a fish fry at the end of the day. Fish caught either day can be entered for special derby prizes.

Members and friends needing transportation or boats may phone Earl McDaniel, ext. 1067 LF, or C. T. Boyle, ext. 2728 KM.

The monthly potluck dinner and meeting will be at 6:30 p.m. June 20 at the Gillespie Field clubhouse.

Color slides of Lake Powell, Willow Beach on the Colorado River and other fishing spots will be shown, as well as motion pictures of fishing in Canadian waters.



TOPS—Leo Slosser won both men's singles and men's all events in annual CRA Plant Bowling tournament, while Marlene Kohler captured women's all events.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111, Kearny Mesa. Deadline for next issue of GD/NEWS is June 20. Call ext. 1071 LF, or 3322 KM.)

* * *

ADVENTURERS—Film showing June 21, 7:30 p.m., CRA Clubhouse. Camping trip to Punta Cabras, Baja California, June 24-25.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB — Outing to Pine Crest, June 23-25.

BRIDGE — Play each Friday, 7:30 p.m., CRA Clubhouse.

CAMERA CLUB—Model shoot, June 18, 8 p.m., Photo Arts Bldg., Balboa Park. Tour of darkroom facilities in CRA Clubhouse tonight (June 14), 6:30 p.m. Call Al Oehler, ext. 1724 LF.

CERAMICS—Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS—Meeting June 21, 7:30 p.m., Convair cafeteria, Lindbergh Field.

DELTA DIVERS — Meeting tonight, June 14, 7:30 p.m., CRA Clubhouse.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th and C Sts.

FISHING—Fishing derby June 24-25 at Lake Henshaw. Potluck and business meeting June 20, 6:30 p.m., Gillespie Field Clubhouse.

ICE SKATING — GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

JUNIOR SCIENCE — Meeting June 16, 7:30 p.m., CRA Clubhouse.

PISTOL CLUB—Club shoot 9:15 a.m., June 25, SD Police Pistol Range.

RADIO CLUB—Meeting June 15, 7:30 p.m., CRA Clubhouse.

RIDING CLUB—Slide show tonight, June 14, 8:15 p.m., CRA Clubhouse, following 7:30 p.m. business meeting. All equitation show, June 18, CRA horse ring.

RIFLE—Senior shoot tonight, June 14, 7:30 p.m.; junior shoot, June 17, 1 p.m., Gillespie Field.

ROCKHOUNDS — Meeting tonight, June 14, 7:30 p.m., CRA Clubhouse.

SCULPTURE — Workshop sessions, Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SPANISH—Slide showing of Mexican tour tomorrow, June 15, 7 p.m., at opening session of CRA-sponsored Spanish course, Convair executive dining room, Lindbergh Field.

SPORTS CAR CLUB — Meeting tonight, June 14, 7:30 p.m., Convair executive dining room, Lindbergh Field.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

TRAVELERS—Weekend outing, June 17-18, to Oak Springs Ranch, Hemet. Call Virg Marshall, ext. 744 LF.

WIVES — Luncheon June 21, Bahia Restaurant. Reservations must be made by noon, June 16, with Mrs. Nolan Loftin, 276-4270, or Mrs. Willard Ohland, 442-5714. Monthly potluck June 28, CRA Clubhouse.

Knutson Wins Both Pistol Club Events

J. S. Knutson of Convair's Dept. 756-0, squeezed out top scores in both events in CRA Pistol Club shooting, May 28. He fired 298 for top master class honors in Camp Perry Police Course firing, then edged teammates with a 277 in Centerfire Short National Course competition.

Runners-up in the Camp Perry course competition and totals were Roscoe Anderson, 286; Roland Schneider, 282; Dick Sutton, 282; Pete Ward of General Atomic, 276, and A. E. Kampman, 273.

Other high scorers on the short national were Warren Ranscht, 276; Schneider, 259, and Kampman, 231.

The club's next regular shoot is scheduled June 25 at the San Diego Police range.

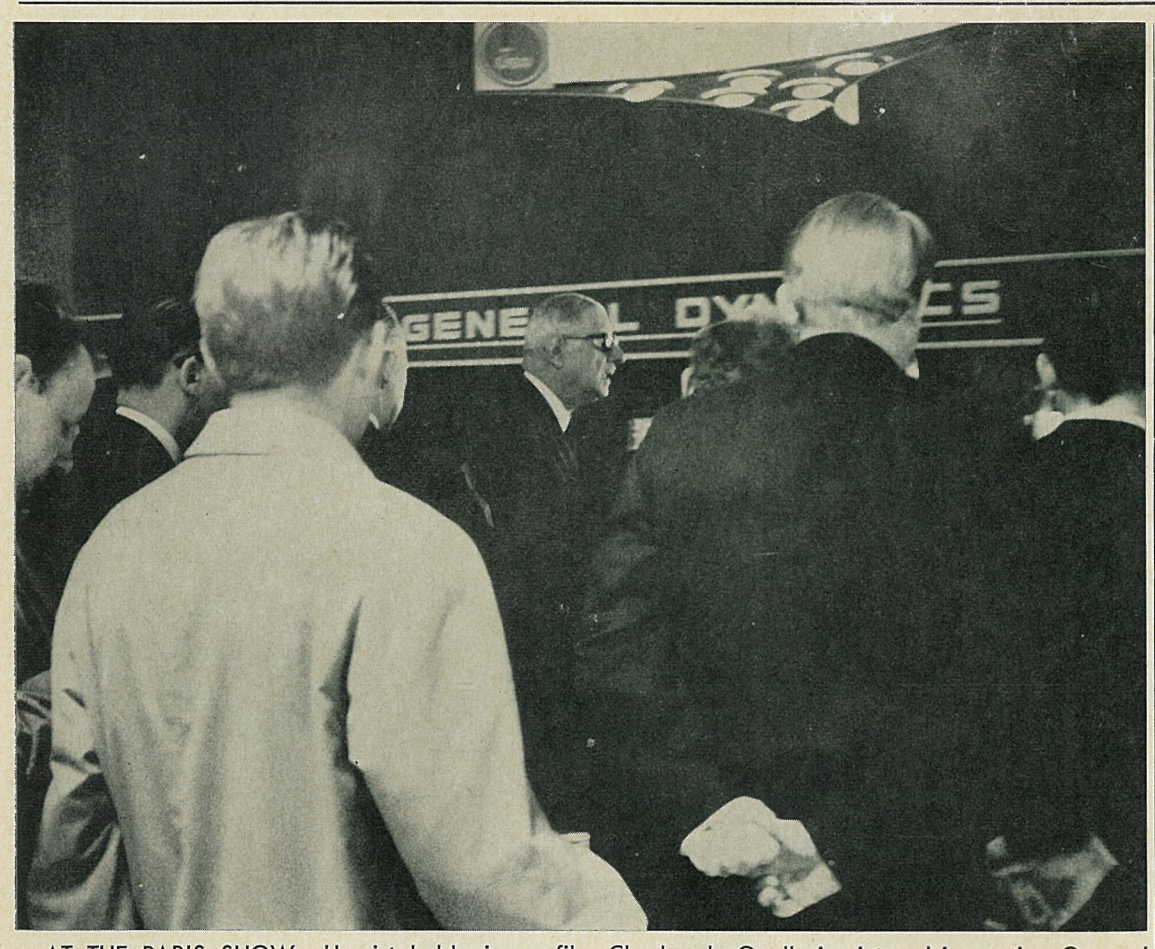
In top photo are Evelyn and Willis Carson, Frances and Mike Brooks, mixed team winners. Below Kelsie Brown and Evelyn Carson, women's doubles winners; Ann and Hal Heist, mixed doubles. At left in back row is Alex Kuhnel, who teamed with John Adams to win men's doubles.

Ninety Free Baseball Tickets Will Go in June 28 Drawing

Ninety tickets for 15 San Diego Padres home games will be distributed in a CRA baseball drawing June 28.

Entry slips, limited to one per person, may be deposited until June 26 and should include employe's name, division, plant, department number, shift and plant phone extension.

Deposit boxes are at Convair, Stromberg-Carlson and Electronics-SD employe services outlets, the engineering mailroom in Bldg. 51 at Lindbergh Field, H. C. Medearis' office at AF Plant 19, and the CRA Clubhouse.



AT THE PARIS SHOW—Unmistakable in profile, Charles de Gaulle is pictured inspecting General Dynamics exhibit at annual Paris International Air and Space show.

ONR and Coast Guard Buoys Start Careers

Ceremonies on opposite coasts last Monday, June 5, started two Convair-developed oceanographic buoys on separate careers — one for the U. S. Coast Guard and the other for the Office of Naval Research.

The large navigational sea buoy was delivered to the Coast Guard at Electric Boat division, Groton, Conn., while on the same day, prototype buoy Alpha, developed for ONR, was launched in San Diego Bay.

The Coast Guard buoy was christened Two Alpha (2A) in a brief ceremony by Mrs. Billy R. Ryan, wife of the chief of the Coast Guard's Aids to Navigation Division in Washington, D.C.

Convair was represented by W. T. Dorrance, director of special programs, and D. B. Dewey Jr., Convair project manager for the Coast Guard buoy.

Following the ceremony the buoy was taken in tow by the cutter Redwood. Instrumentation equipment will be installed at New York.

The buoy will serve as a navigation aid and ocean data station at the southern approach to New York harbor, off Sandy Hook, N. J. It has a 5,000 candlepower light visible for 10 miles in clear weather, a fog horn audible for two miles, and a radio beacon with a 35-mile range.

ONR's prototype Alpha was moored last Sunday in 500 fathoms 12 miles off La Jolla, Calif., for long-range telemetering tests.

Tests will demonstrate the buoy's ability to acquire, store, and transmit oceanographic and meteorological data over long distances. During the testing, Alpha will be interrogated by a Mobile Data Center which will travel up the West Coast as far north as Seattle, stopping at various points to communicate with the buoy at sea.

Alpha is the second buoy to be completed by Convair for ONR. The first ocean data station buoy, Bravo, was launched at Jacksonville, Fla., in 1964 and immediately began tests in the Gulf Stream off the Florida coast. Bravo was returned recently to San Diego.

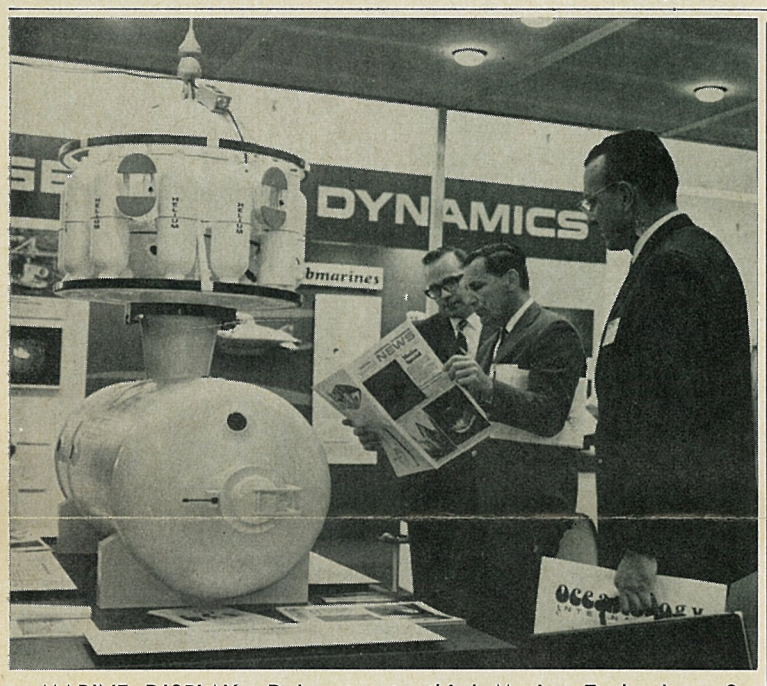
Dynamics Speakers Address Societies

Three from General Dynamics spoke to organizations recently in the Fort Worth area.

W. R. Owens, nuclear group engineer, spoke on "Instrumentation for the Apollo Program" at a monthly meeting of Instrument Society of America.

"Flight-Testing the F-111" was the topic for Val Prahl, manager of flight, when he spoke to the Society of American Value Engineers.

B. E. Justice, assistant director reliability and quality assurance-Corporate office, spoke to the Society of Non-Destructive Testing. His subject was "NDT Today and Tomorrow."



MARINE DISPLAY—Delegates to third Marine Technology Society Conference last week in San Diego viewed extensive General Dynamics marine exhibits featuring research submarines, oceanographic measuring devices and ocean data stations. Above is group around model of Mark II deep diving system, scanning special marine edition of GD/NEWS published for delegates.

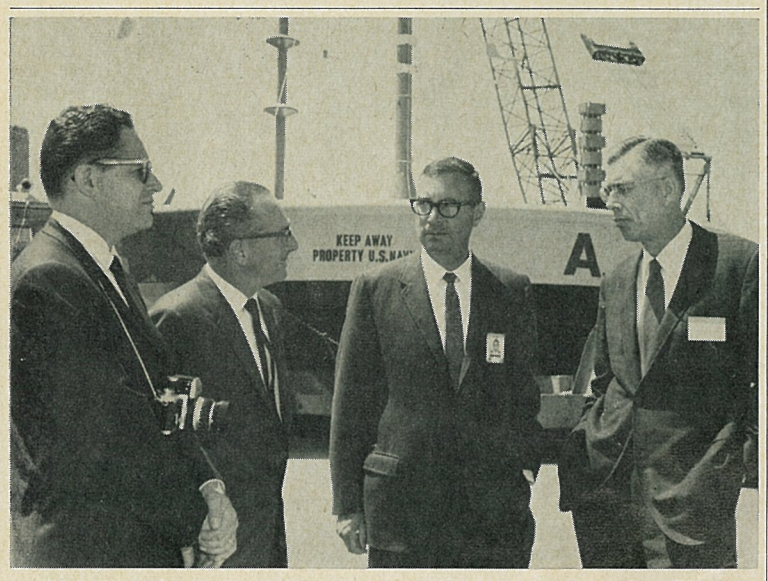
General Dynamics Merit Scholar Is Honored in White House Ceremony

A General Dynamics Merit Scholarship winner has been named a presidential scholar by President Johnson.

Nicholas Smith, 16, son of Mr. and Mrs. Harold D. Smith of San Diego, was one of 121 outstanding students in the nation to be recognized in a White House ceremony yesterday, June 13, in Washington, D. C. (His father is a design engineer in Convair division.)

Nicholas, who graduates this month from Crawford High School, was one of two San Diego students chosen as winners of National Achievement Scholarships for Outstanding Negro Students. He also is a winner of a California State Scholarship in addition to the National Merit Scholarship sponsored by General Dynamics.

He plans to enter California Institute of Technology at Pasadena, Calif., this fall heading toward a major in chemistry.



OBSERVERS—From left, Dr. E. B. Shykind, Interagency Committee on Oceanography; Peter Trapani of Scripps Institution of Oceanography; Robert Devereux, Convair ocean data station program manager; and James Snodgrass, also from SIO, watch operations during launch of ONR buoy Alpha at San Diego.

Variable-Sweep And Tilt Wing Up Speed Ratio

One of the main objectives of aircraft designers—increasing the range between the maximum speed in flight and the minimum speed for takeoff and landing—has been made possible by tilt-wing and variable-sweep wing design, Edward H. Heinemann said in Paris late last month.

Heinemann, General Dynamics vice president - engineering and program development, addressed the 8th International Aeronautical Congress at the Ecole Nationale Superieure de l'Aeronautique. Tilt-wing and variable-sweep principles have been proven as sound advancements from which many new uses and requirements will evolve, he said.

"No longer need the designer be concerned regarding the feasibility of these principles," Heinemann said, "but rather with his wisdom in their application for each specific use."

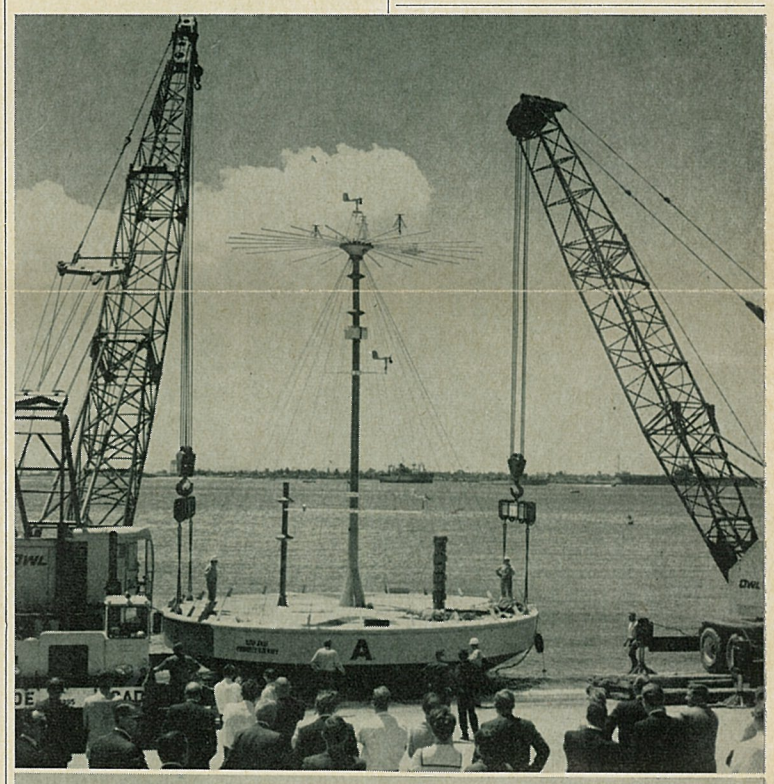
For many years, Heinemann said, a speed ratio of five or six was the maximum achievable. For example, modern subsonic jets with a stalling speed of a hundred miles per hour usually have a maximum speed of about six hundred miles per hour.

"With variable sweep," Heinemann said, "a speed ratio of 15 to 1 is now achievable as compared to a ratio of about 10 to 1, the best usually achievable with fixed-wing, supersonic jet aircraft. The speed ratio achievable with a tilt-wing is, of course, much greater depending on its mode of operation and tilt angle."

Safety can be improved and runway lengths can be reduced by the principles of wing tilt and variable sweep, Heinemann added, because the energy required to stop them for landing is far less than fixed-wing craft.

Heinemann said the tilt-wing V/STOL (Vertical/Short Takeoff and Landing) aircraft, such as the Canadair CL-84, has an advantage over both the helicopter and STOL (Short Takeoff and Landing) craft because it can operate in both the vertical and horizontal takeoff and landing modes.

"As in the case of the helicopter," he said, "it is believed that the tilt-wing machine will be found a most useful solution to many military and commercial requirements, and that it will bridge the gap between the helicopter and the fixed wing, having almost all of the advantages of both but with few of the disadvantages."



TWIN LAUNCHES—Lower photo shows Coast Guard buoy in tow by cutter Redwood en route to New York following acceptance ceremony at Groton, Conn., last week. On same day, prototype buoy Alpha, developed by Convair for Office of Naval Research, was launched at San Diego, upper photo.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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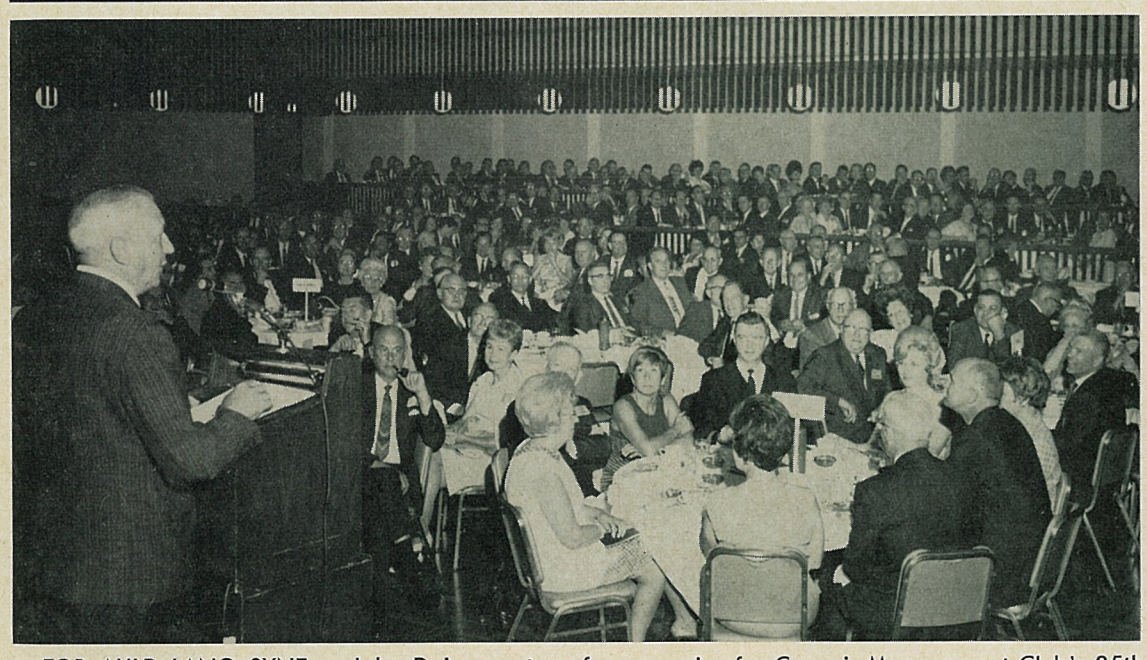


FOR AULD LANG SYNE — John Doig, master of ceremonies for Convair Management Club's 25th anniversary banquet in El Cortez June 8, kept audience chuckling with quips as he introduced past presidents and charter members. Other photos on page 4.

Atlas Sends Mariner 5 On Long Space Journey

Convair's Atlas SLV-3 No. 5401 functioned perfectly June 14 as it lifted NASA's Mariner 5 into space for the start of its four-month, 212½-million-mile flight that is expected to bring it to within about 200 miles of the planet Venus on Oct. 19.

The Atlas lifted off Complex 12 at the Eastern Test Range at 2:01 a.m. (Eastern Daylight Time), less than 2/10-second into the desired "launch window" and its flight marked the 32nd consecutive successful launch of an Atlas space launch vehicle.

After the Atlas separated at more than 100 miles altitude and about 500 miles downrange, two burns of the Agena-D second stage vehicle provided velocity needed to carry the spacecraft along its desired, looping flight path for the Venus fly-by.

Convair officials at Cape Kennedy for the launch were Andrew Kalitinsky, assistant program director-launch vehicle engineering; Richard W. Keehn, Atlas SLV program office manager, and Jim Von der Wische, project manager for NASA SLV-3 programs.

"The countdown and launch went extremely smoothly," Kalitinsky said. "A very accurate in-

(Continued on Page 2)

Satellite 'Triplets' Sent to Vandenberg

Three Orbital Vehicle One (OV1) scientific satellites have been prepared by Convair for simultaneous launch into polar orbit.

OV1-11 and OV1-12 will ride into space from Complex 576-B at Vandenberg AFB on the nose of Atlas 92D and OV1-86 will be side-mounted on the same booster. (The OV1-86 vehicle is so numbered because it is composed of the satellite from OV1-8 and the propulsion module from OV1-6.)

The upcoming launch will be the last in which two OV1s will be enclosed in a "coffin" atop the booster and the last in which an Atlas D booster and an Atlas D "horizontal" launch site at Vandenberg will be used.

Future nose-mounted OV1s will be enclosed in new heat-shield fairings and will be launched by refurbished Atlas E and F series boosters.

Atlas 92D will begin its climb through space with a westerly heading from Vandenberg, then will be turned south through a roll maneuver and yaw turn.

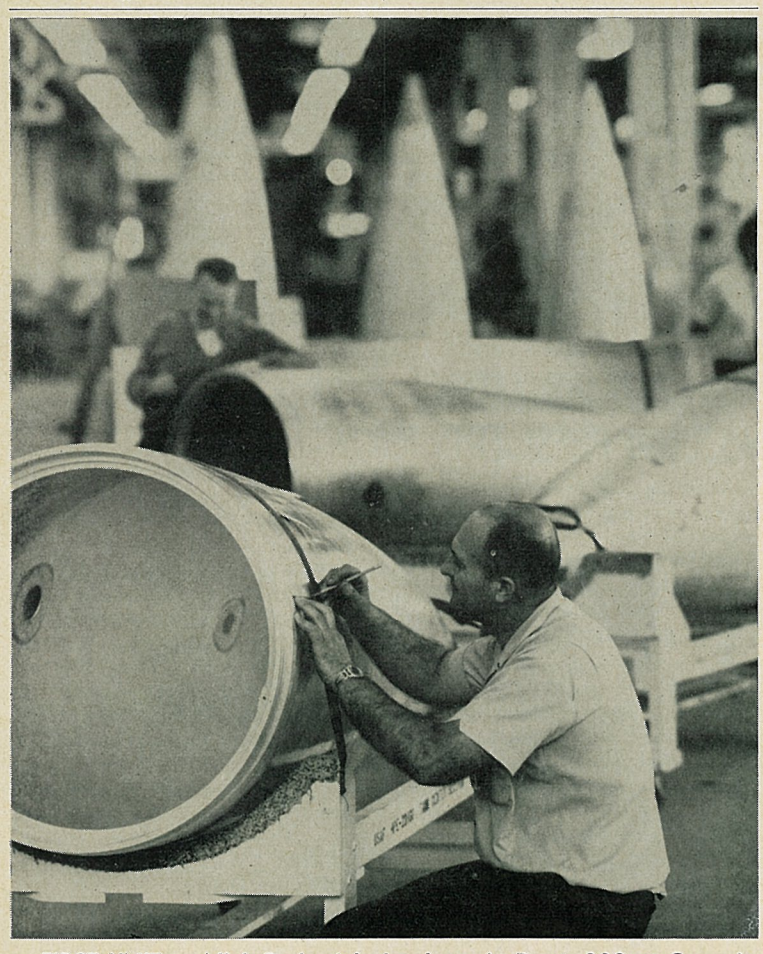
Solid-propellant motors of the three OV1s will fire them into circular orbits at about 300 nau-

(Continued on Page 6)

New Members Join Con-Trib Committee

Convair Employes' Con-Trib-Club committee members in their June 15 meeting granted $1,000 to the San Diego Urban League, Inc., to assist in providing staff funding for its tutorial program. Initiated in 1965, the program is designed to increase basic academic skills of under-achieving youth.

Two new Con-Trib committee members have been appointed to replace members who have resigned. They are J. E. Cook, replacing J. R. King as Convair Management Club representative, and A. J. Cali, replacing H. W. Fuller as IAM representative.



FIRST UNIT — Nick Perkovich, leadman in Dept. 002 at Convair, checks installation of bulkhead in nose section of first of 37 F-111 fuel tanks being fabricated at San Diego for Fort Worth division under R&D program. Bill Wolfe is in charge of tank production operations at Convair Lindbergh Field plant.

Underwater Test Facility Being Built

An underwater test facility for Convair's life sciences Dept. 592-0 is under construction adjacent to the life sciences laboratories and integrated manned systems simulator (IMSS) in Bldg. 4 at Kearny Mesa.

Scheduled for completion in August, the pool will have 35 x 45-foot inside dimensions and will be 15-feet-deep with a flat bottom. It will have 12-inch-thick gunite "walls."

A 15 x 16-foot viewing room at the north end of the pool, also 15 feet in height, will have two 4 x 5-foot windows of optically ground glass for viewing and photography.

Robert C. Armstrong, MD, chief of life sciences, said the facility will be used primarily in studies simulating low-gravity conditions in space. The bottom of the pool will be equipped with tie-down brackets for mounting spacecraft mock-ups and other equipment.

Initial studies to be conducted under the direction of Robert S. French, PhD, chief of the life sciences crew performance group, will be for validating a Convair-developed water-pressurization system for space suits in comparison with air pressurized suits under neutral-buoyancy conditions.

Water in the pool will be maintained at 90 degrees to simulate internal spacesuit heating during astronaut extra-vehicular activity.

Tests of underwater and oceanographic "hardware" and underwater propellant system and water survival training for Convair test pilots also will be scheduled.

Bio-monitoring, telemetry and computer data systems in the adjacent IMSS will be utilized, with transmission lines connecting the IMSS and the pool. William A. Shafer, MD, of the life sciences aerospace medicine group will be medical monitor for all manned test programs.

SCUBA-qualified crew performance group personnel who will participate in underwater tests in the new facility include Richard Wolf, Robert Brazell, Ernie Casco, Gary Thomson and Jurgen Amtmann. George Gill is technician for the group.

Requirement specifications for the facility were prepared by facilities planning Dept. 202-0 personnel under the direction of Sam Johnson.

REMEMBER — Gloria Anderson, secretary in Atlas D/E/F program, looks over Atlas flight summary in new walnut and glass display board in Bldg. 26 at Kearny Mesa. Each flight is identified by number, date, launch site and program. Summary is updated after each launch.

Casual Trip to Salvage Yard Leads to Idea Worth $2,516

A visit to an employes' salvage sale to buy a few "odds and ends" for his ranch has paid off with a $2,516.70 Employe Suggestion check for Clyde W. Donahoo, a senior technician in Dept. 142-1.

Donahoo, in going through a box of assorted nails, wire and miscellaneous items he had purchased for 75 cents, unearthed 60 discarded galvanometers for use in oscillographic recorders that are only about two inches long but sell for an average of $150 each.

Because of his knowledge of their cost, he brought several into the plant to be checked. Investigation also disclosed that each, even though defective and unusable, can be returned to the manufacturer and exchanged at a saving of more than $100 each.

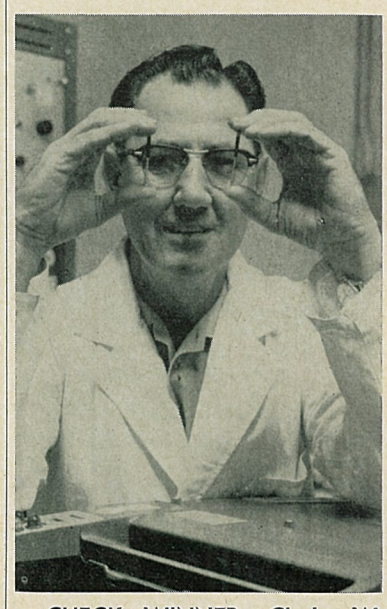
Thirty-five or more of the little galvanometers are used in each recorder for detection and measurement of electrical current.

Direct action by Donahoo during a period of several weeks resulted in recovery of 202 galvanometers from salvage and an additional 115 from various test labs where they were not being used and were no longer needed.

Tests showed 196 to be usable and they were returned to the standards and calibration laboratories stockroom for reissue. The 121 found defective were exchanged at a savings of $14,365.

Follow-up action by Donahoo and his supervisor, J. E. Vondracek, resulted in bulletins being

(Continued on Page 2)



CHECK WINNER—Clyde W. Donahoo of Convair's Dept. 142-1 displays two small but costly oscillograph galvanometers.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between June 15 and June 30.

Thirty-year: Dept. 250, J. F. Speed.

Twenty-five-year: Dept. 031, D. W. Ingram; 055, R. W. Miller; 103, Doris E. Taylor; 143, E. W. Coleman; 144, S. Braun; 146, P. Sletnar; 250, R. S. Montgomery; 544, L. B. Chabot; 840, Lily H. Kramer; 988, H. H. Rush.

Twenty-year: Dept. 001, W. C. Walker; 002, C. W. Johnson; 015, H. E. Jones Jr.; 460, M. Korandovitch; 584, W. H. Bond; 756, C. F. Stancil; 761, T. A. Cooksey; 842, Ava B. Gray.

Fifteen-year: Dept. 015, E. W. Ford; 019, R. V. Lucero; 024, C. E. Day; 031, J. H. Sarik; 059, J. M. Cooper; 101, Phyllis F. Scott; 113, W. T. Elliott; 170, H. C. Heath; 190, R. E. Carlson; 191, Alice H. Myers; 195, J. L. Flynn, E. T. McAbee; 250, G. R. Bone, S. J. Rollason; 400, F. D. Aiken, R. L. Pharr; 401, V. P. Edmondson; 454, S. White Jr.; 460, B. K. Haugland; 515, Lelah P. Rudis; 524, Margaret M. Dumler; 526, J. F. Snyder Jr.; 533, G. T. Draper; 551, W. M. Williams; 566, C. A. Backus.

Dept. 579, D. A. Fletcher, J. E. Gillette; 596, O. J. Neller; 597, E. H. Wrench; 732, D. L. Rennie; 744, C. R. Raedel; 759, B. E. Fuller; 764, W. V. Marshall; 831, D. M. Thomas; 832, Lucille M. Sundstrom; 954, A. P. Pedo; 960, K. Kachigan; 961, R. A. Tobias; 962, R. A. Cox; 985, J. E. Allcorn, V. A. Newcomb; 986, Frederick D. Winston; 988, R. K. Hamilton, R. C. Packer.

Ten-year: Dept. 001, D. C. Herstedt; 101, Frances L. Hastings, W. E. Morris Jr.; 113, Donna L. Cooper, M. K. Winslow; 130, B. A. Kulchin, A. Schultz; 141, B. W. Pesta; 144, Nelda J. Belik; 146, P. G. Graham; 170, H. A. Shepard; 250, L. W. Proff, Eulah Trice; 401, J. H. Troyer; 402, Frances Osborne; 491, F. J. Glenski; 511, G. R. Theilacker; 519, Dawne D. Daynes; 521, Ella M. Stevens; 524, Grace L. Lazenby, Ruth V. Wolfe; 541, H. H. Tracy Jr.; 543, J. N. Kostas; 545, J. S. Rutkauskas; 563, W. Nutt; 566, J. D. Arnold; 572, M. D. Campbell; 574, M. Mills, 578, R. M. Anderson, G. L. Kugler.

Dept. 579, B. M. Maderazo; 581, C. J. Tait; 583, F. D. Breuer; 584, J. F. Hinton; 585, B. J. Kuchta; 588, B. H. Oman; 595, J. W. Caltrider; 733, Rozella J. Dobbs, J. Z. Fuentes; 764, W. Kongle Jr.; 780, G. D. Gentry, W. A. June; 810, A. J. Gunther; 831, D. H. Slusher; 832, J. F. Chrivia; 833, H. La Gant; 850, B. J. Tice; 950, R. R. Martin Jr.; 951, F. E. McVay; 953, Norma M. Austin; 956, J. E. McCafferty; 958, J. H. Rusk Jr.; 961, Barbara Sue Hogan, R. G. Jones; 962, R. J. Bakke; 964, A. I. Ames; 967, J. E. Frederick, F. G. Rivinius; 979, Vera R. Bishop, J. W. Buresh, C. H. Clanton, C. L. Crockett, A. B. Dyer, B. L. Forester, J. B. Frier, J. L. Kettring, L. Moore, C. Mullins, D. F. Waring Jr.; 985, J. S. Blackmore, C. D. Cordial, R. L. Davenport, R. L. Hutchings, C. F. Ritter; 988, E. J. Collier; 999, K. L. Montgomery.

ELECTRONICS

Twenty-year: Dept. 425, W. W. Lynt.
Fifteen-year: Dept. 713, L. D. Davis.
Ten-year: Dept. 613, R. E. Fixsen; 711, Felicia E. Hansen; 713, H. J. Hausner Jr.; 811, T. E. Fiscus.

STROMBERG-CARLSON

Fifteen-year: Dept. 81-20, F. P. Walz; 86-10, R. L. Yansch.
Ten-year: Dept. 84-11, M. E. Knowles; 85-60, E. H. Adamson; 86-21, A. W. Christensen.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending June 9.

Dept. 001-0, J. Hammer, J. L. Housley, C. B. Reid, W. K. Richeson; 002-0, E. Fountain; 005-0, R. R. Gourley; 015-0, S. Brown (two awards), G. M. Calahan, J. F. Silva, W. G. Wells; 027-0, G. R. Comfort, W. F. Hoover, C. L. McNeal, J. F. Meller, F. J. Serio (two awards), K. R. Waldrop; 049-0, O. W. Brotherton, L. C. Foust, H. J. Komos, M. A. Puentes; 101-2, J. D. Smith; 142-1, C. W. Donahoo; 143-3, P. E. Petiford; 149-0, J. J. Swarts; 170-1, R. M. Mueller; 193-3, R. C. Firestine; 454-0, R. K. Arii, S. Connizzaro, A. A. Carlson, R. C. Christopher; 519-0, C. Greve Jr.; 524-0, M. E. Cowart; 717-0, N. L. Valentino (two awards); 732-0, C. F. Davis; 733-1, R. V. Alexander, D. W. Bengel, G. N. Hayes, H. Staten; 744-0, J. A. Maillet; 763-0, J. D. Willingham; 833-2, L. L. Bender; 840-3, M. F. Gonzales; 957-0, R. E. Torrence; 957-2, C. T. Harris, K. McCafferty; 979-1, A. E. Abrams, A. C. Darr Jr.; 979-2, R. W. Suess; 979-4, C. L. Wadding.

Employe Suggestion awards approved for the week ending June 15.

Dept. 015-0, J. P. LaLanne; 024-0, J. C. Wilson; 031-0, J. Nonzeta; 041-0, T. W. Kerns; 059-3, B. M. Ingbretsen; 059-4, W. L. Chartier; 101-6, R. E. Williams; 123-0, A. J. Nybo; 130-4, A. C. Sutherlin; 131-4, M. D. McLeod; 141-2, D. A. Menard, B. W. Pesta; 143-1, J. S. Adams; 144-1, E. E. Franke; 251-3, W. J. Wissinger; 454-0, G. W. Lyst; 519-0, T. P. Balistreri; 542-0, R. A. Hala; 543-1, W. R. Harger; 732-0, D. White; 733-0, M. R. Crawford, C. W. Maxfield, R. E. Reeves; 820-0, M. Formanek; 841-0, R. M. Nicholas; 957-2, C. T. Harris; 964-2, K. K. Eulette; 967-9, P. B. Craigmyle; 979-1, R. O. Boles; 979-2, W. E. Morton; 979-3, G. M. Crusselle; 979-6, M. A. Baldwin, B. DeVeau; 985-1, J. D. Hamner; 985-4, D. L. Ashford; 987-0, L. O. Marine, H. R. Short.

General Dynamics News

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Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Mondays, July 10 and July 24. Lindbergh Field, ext. 491, Bldg. 14 auditorium, 8 a.m., Tuesday, July 11; 4:30 p.m., Tuesday, July 18.

SD CITY COLLEGE

BLUEPRINT READING—40 hrs. (20 hrs. lecture, 20 hrs. workshop.) 4 to 6:30 p.m., twice a week. For information contact Hal Rubin, ext. 1931 KM.

U. OF CALIF. EXTENSION

Individuals participating in the current University of California Extension certificate program for professional designation and senior award in Business Systems Management please contact Don Olsen, educational services, ext. 1931 KM.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY—A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Invention Disclosures

CONVAIR

BROWN—J. L., Dept. 756-0. Drive Method for Rotating Fatigue Testing Machine.

CAMPBELL—R. S., Dept. 144-0. Copper or Aluminum Clad Stainless Tube Fittings.

HANNAY—P. M. and E. H. HAUPT, Dept. 562-3. Jettisoning Means.

SCHULTZ—F. G., Dept. 511-6. Radial Fastener Locating Device.

SCHULTZ—F. G., Dept. 511-6. Metal Drawing Tip.

Personals

CONVAIR

Your kind expressions of sympathy at the death of my husband, Earl Martin, is deeply appreciated and gratefully acknowledged.

Zella Martin

* * *

I wish to thank all of my Convair friends at both Lindbergh Field and Kearny Mesa for the cards, flowers, gifts and other kindnesses during my illness.

Millie Skurla, Dept. 041

* * *

We wish to extend our sincere thanks to our Convair friends for their kindness and expressions of sympathy following the recent loss of our wife and mother, Barbara P. Andre.

Richard L. Andre and family, Dept. 979-3.

Rider-Driver

CONVAIR

RIDE WANTED—From Paradise Hills to Kearny Mesa, 7:30 to 4:15 shift. Call Vivian Robinson, ext. 3211 KM or home, 477-8965.

RIDE WANTED—From Kearny Mesa plant, one way only, 4 p.m., to 6233 Merced Lake Ave., near Lake Murray Blvd. and Jackson intersection. Cathie Walk, ext. 1459 KM.

Deaths

CONVAIR

REED—W. D., Dept. 200-0. Killed in car accident June 17. Survived by wife, Delores, daughter, Valerie; sons, Steven and William; two brothers.

SHAHAN—Lewis, Dept. 401-6. Died June 16. Survivors include his wife, Jeannette.

W. D. Reed Dies In Car Crash

W. D. Reed, Convair manager of production engineering, was killed June 17 in a tragic accident near Rosarita Beach, Baja California, where he and his wife, Delores, maintained a summer home.

Reed was killed instantly when the car he was driving struck a bridge railing. Mrs. Reed received severe injuries and is now in Grossmont Hospital where she was taken last Tuesday from the Guadalajara Hospital in Tijuana.

A native of Tennessee, Reed first joined Convair in 1941. He worked up through the ranks in assembly and final mating to become assistant general foreman in 1944 during the B-24 program. He was superintendent of fabrication at former Plant 1 when he left the Company in 1954. He returned in the fall of 1960 and was assistant factory manager and manager of subcontract production. He had held the position of manager of production engineering since merger of the former Astronautics and Convair divisions.

Besides his wife, he leaves a daughter, Valerie, 10, son, Steven, 12, and another son, William, by a former marriage.

Plant Engineers Elect E. G. Kiener

E. G. Kiener of Convair facilities engineering will be among officers of the San Diego Chapter, American Institute of Plant Engineers, to be installed tonight, June 28, at a dinner-dance at the Stardust Hotel.

Kiener is newly-elected vice president. President is A. A. Adams, maintenance control director of the Navy Public Works Center.

S-C SLATE — R. K. Barnett, new president of S-C Management Club (at head of table), is flanked by other newly-installed officers, from left: P. A. Harkins Jr., treasurer; J. L. Westling, second vice president; Cynthia Schick, secretary; R. T. Hayde, first vice president. At right of Barnett are A. S. Carnhan, new board member, and Roy Gilmore and Jack Weaver, hold-over members.

NEW JOBS—Arch Rambeau, newly-elected president of Convair Management Club, accepts gavel from John Patton, NMA director, who installed officers June 19. Others in front row, from left, are J. M. Farrar, first vice president; A. R. Mosco, second vice president; H. B. Day, recording secretary; B. J. Neal, financial secretary; J. L. Mumford, treasurer. In back row, from left, are new board of control members W. F. Chana, A. H. Gross, Lyle Wood, R. M. Mitchell, J. E. Cook, John Tannone.

CLUB SLATE—E. R. Peters, new president of Electronics-SD Management Club, at left, talks over coming year's plans with R. E. Fixsen, second vice president; Sy Spalter, board of control member; Vicki Allen, treasurer; R. H. Nicholson, board member; Juan Green, secretary. H. L. Copeland, first vice president, is not shown.

Harry Norton Installed As President Of SD Chapter, Instrument Society

Harry N. Norton, a senior instrumentation engineer in Convair's Dept. 988-2, has been installed as president of the San Diego section of the Instrument Society of America.

He also serves the ISA's national organization as director of standards and practices and as associate director of the aerospace industries division.

Other Convair personnel serving as officers of the San Diego section are Darlo J. Clemens, Dept. 142-1, vice president; Andrew J. Woodington, Dept. 142-0, secretary, and Arthur E. Lyerla, Dept. 142-1, treasurer.

Donald J. Ferris of Convair's Dept. 578-4 is standards and practices chairman; Richard K. Barnett of Stromberg-Carlson is publicity chairman; Darrell G. Hubbard of General Atomic is membership chairman; and John T. Bauer of General Atomic, society delegate.

Salvage Yard Trip Leads to $2,516 Idea

(Continued from Page 1)

issued to personnel using oscillographic recorders requesting that all unused or defective galvanometers be returned rather than discarded or sent to salvage. About 1,000 of the expensive little "galvos" have been "brought back into the system" as a result.

Donahoo received a certificate of commendation June 19 from L. I. Medlock, director of reliability control, in addition to his suggestion award check, which he said will "pay a lot of bills."

RAMBEAU INSTALLED AS CLUB PRESIDENT

Assignments for Convair Management Club board of control members were announced by Arch Rambeau, newly-elected club president, at the June 19 installation of 1967-68 officers held in the Bronze Room, La Mesa.

Al Gross heads programs. Lyle Wood is responsible for advance planning; Don Anderson, membership and Boosters; L. H. Allen, communications; W. F. Chana, management development; John Tannone, awards; Jess Cook, public relations.

Each will set up his own subcommittees.

Rambeau and his staff were installed by John Patton, NMA director from Zone A.

Robert Montague, outgoing management development chairman, was in charge of the program pointed specifically at indoctrination of new members.

Barnett Heads S-C Mgt. Club

R. K. Barnett heads the slate of officers for 1967-68 installed by the Stromberg-Carlson Management Club at San Diego June 8 at the House of Sirloin.

Barnett, chief of quality assurance for S-C Data Products, succeeds Clay Murdock.

Other newly-elected officers installed by NMA Zone A manager, J. V. Kappler, were R. T. Hayde, first vice president; J. L. Westling, second vice president; Cynthia Schick, secretary; and P. A. Harkins Jr., treasurer.

A. S. Carnahan is new three-year board of control member. He joins Roy Gilmore and Jack Weaver, hold-over members of the board.

Dause Bibby, Stromberg-Carlson president, headed a delegation of S-C and GD Corporation officials in San Diego for the installation.

Others were A. A. Hendrix, Corporate vice president; John J. Graham, Corporate vice president of the Electronics and Industrial Group; John C. Franklin, vice president for Corporate development; Sidney Kirschner, long range planning; Donald Mitchell, engineering staff-electronics systems; and O. D. Center, S-C vice president-finance.

GD Trio Installed As CSPE Officers

Three General Dynamics employes have been installed as 1967-68 officers of the San Diego chapter of the California Society of Professional Engineers.

Albert S. Keevil of Convair Dept. 965-1 is president, Richard W. Palmer of General Atomic is second vice president, and William J. Sevier of Convair Dept. 532-1 is treasurer.

Committee chairmen include R. D. Kesler, Convair Dept. 572-2, civic development; E. A. Hamilton, Convair Dept. 553-2, CSPE 1968 annual meeting; Philip Rogers, Convair Dept. 966-4, legislative; and Richard Mann, General Atomic, membership and professional practice.

Atlas Sends Mariner On Long Space Journey

(Continued from Page 1)

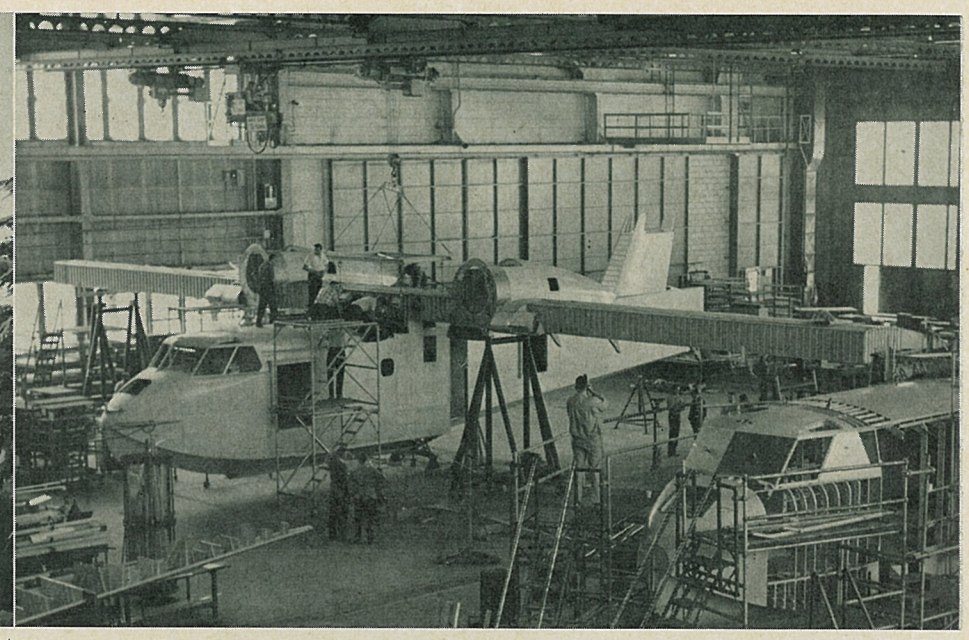
jection was achieved so very little mid-course correction was required."

Thomas Chitty was launch conductor with Thomas Phillipp and H. G. Croskeys Jr. as assistants. C. M. Mullins was launch site foreman.

Primary objective of the Mariner Venus '67 mission is to obtain scientific information on the nature of Venus and its environment. Although it is the closest to earth, Venus is largely an "unknown planet" because of its thick cloud envelope. Theories on its atmospheric density range from five to several hundred times that of earth's atmosphere.

FLYERS CHANGE MEETING DATE

Bonair Flyers have changed their next meeting date to avoid conflict with the Fourth of July holiday. They will meet the second Tuesday, July 11, instead of the usual first Tuesday. Meeting time is 7:30 p.m. at CRA Clubhouse.



UTILITY SHIP — Artist's conception at left shows Canadair's new amphibian CL-215 in one of numerous roles for which it can be adapted. This "water bomber" version is for forest fire fighting. In photo at right No. 1 aircraft is shown at mating of wing and fuselage at Montreal.

New Canadair Airplane To Roll Out Next Month

Canadair's new amphibian, utility air tanker aircraft CL-215, is scheduled for roll-out from the Montreal factory late next month with first flight expected in September.

Thirty of the aircraft, in the air tanker (water bomber) configuration, are on order, 20 for the Forestry Department of the Province of Quebec and 10 for the French Government. These will be used primarily as forest fire fighters, dumping thousands of gallons of water or retardant on forest blazes long before ground crews could reach the scene.

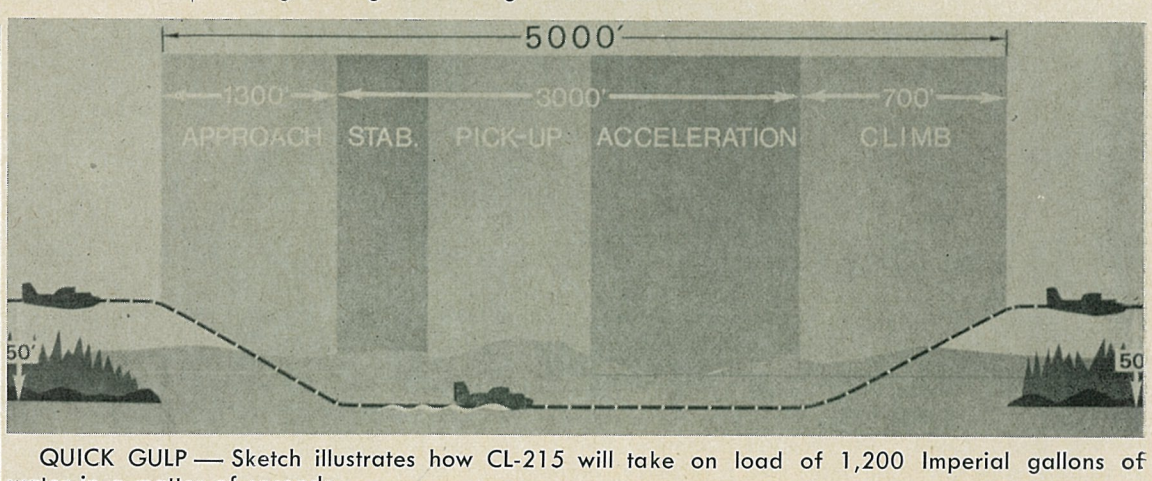
For rapid pick-up of water and return to the fire scene, the concept involves operating from the nearest suitable body of water. The aircraft, planing over the lake surface at 70 knots, can take on 1,200 Imperial gallons in 12 seconds. Normal drop height is 75 to 150 feet and the whole 1,200 gallons can be dropped in 1½ seconds, if desired.

The aircraft is being offered in a number of configurations in addition to the utility water bomber, including search and rescue, maritime patrol, transport or cargo carrier, for crop spraying, forest fertilizing and general agricultural work.

Wing span is 93 ft., 10 inches and overall length 63 ft., 6.6 inches. Overall height (on land) is 27 ft., 2 inches. Design cruise speed is 190 knots with design dive speed of 240 knots. Power plant is two Pratt and Whitney R2800 AM2 18-cylinder, two row radial.

In the water bomber version, the aircraft carries two tanks of 600 Imperial gallons each. Water load is dumped through two hydraulically-actuated doors in the bottom of the hull.

The CL-215 can drop over 45,000 Imperial gallons on a fire 100 miles from its base before having to break off to refuel. After completion of its tasks during the fire season the CL-215 continues to perform productive work in its utility role.



QUICK GULP — Sketch illustrates how CL-215 will take on load of 1,200 Imperial gallons of water in a matter of seconds.

'Solid Communication' Maintained Between Alpha and Mobile Center

Office of Naval Research buoy Alpha, developed by Convair, this week reached mid-way point in the present long range telemetering test with "unbelievably good" results.

Robert Devereux, who heads Convair's ocean data station program, said "solid communication" has been maintained since testing started a couple of weeks ago between the buoy, moored in the Pacific off La Jolla, Calif., and the Mobile Data Center traveling north to test ranges of the oceanographic buoy.

High frequency signals from the buoy have been able to slice through the heaviest radio interference, Devereux said after an on-the-spot check while the Mobile Data Center was based at Monterey last week. (Even "interference" from the thousands gathered there for a hippie-type festival didn't delay contact with the buoy.)

In the last two weeks the Mobile Data Center has made contact with the buoy from Santa Barbara, Monterey, and has been based at the Naval Air Station, Alameda, since last Wednesday.

Today it is due to be en route to Corvallis, Ore., as it continues testing over the north-south pattern. It will be located at Oregon State University campus.

It will go to Seattle where it will be set up at Fort Lawton next week. Return to San Diego is set for mid-July.

Devereux said that the mobile unit will probably go cross-country this fall, gathering data in increments across the east-west path.

Now, the Mobile Data Center interrogates the buoy regularly four times during day and night —at 10 a.m., 2 p.m., 10 p.m., and 2 a.m. Data on digital magnetic tape is mailed to San Diego every day for processing and analyzing.

Simultaneously, the VHF mobile station set up on Point Loma monitors performance of the buoy's ocean data acquisition system. Data describing the system's performance is recorded on analog magnetic tape throughout communication between the buoy and the MDC.

In addition, the VHF station makes other checks on the buoy occasionally, especially when it is obscured from sight by poor visibility conditions. In clear weather, the light on the buoy's mast is clearly visible at night and the hull can be seen on clear days.

Both stations are manned around the clock by two shifts. Traveling with the Mobile Data Center are Lou Scott, T. R. Shelor, John Thayer, James Sanders, Lee Bettis.

Assigned to the VHF station are C. D. McIntyre, W. A. Schmitz, Tom Nilson, Jack Heming, R. J. Bjorstrom.

CAMPAIGNERS—Algie A. Hendrix, right, Corporate vice president, looks over Savings Bonds promotion material with Logan Jenkins, GD/NEWS editor-in-chief. Latter recently accepted U.S. Treasury Department award in recognition of GD/NEWS support of Savings Bonds program.

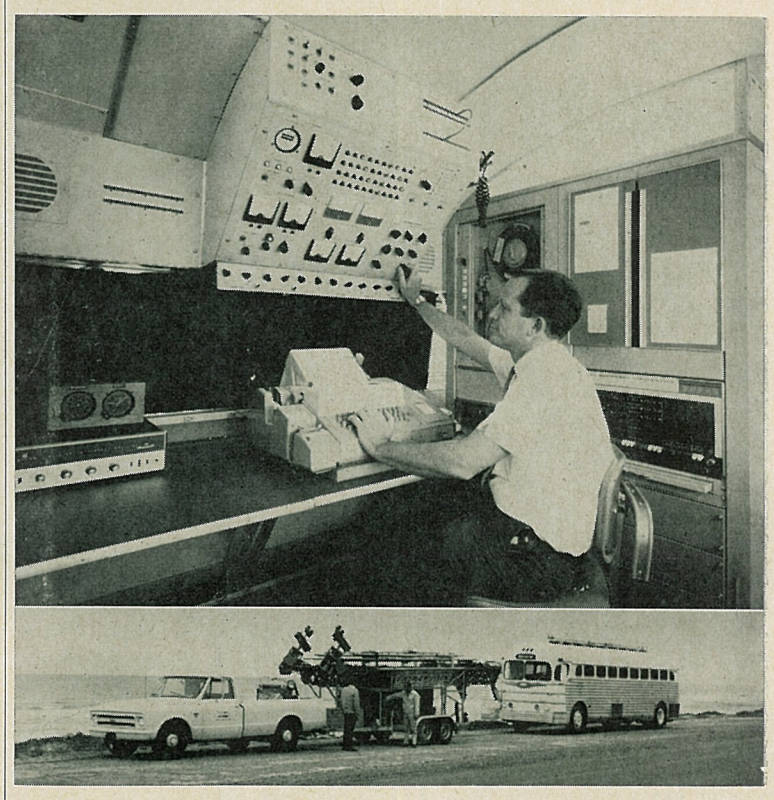
AF Consolidation Effective on July 1

The Air Force Ballistic Systems Division and Space Systems Division will be consolidated July 1 to form a new Space and Missile Systems Organization (SAMSO), Gen. James Ferguson, commander of the Air Force Systems Command, has announced. Headquarters will be at the Los Angeles Air Force Station near International Airport.

Maj. Gen. John W. O'Neill has been named commander of the new organization. He has been serving as commander of the Electronic Systems Division at Hanscom Field, Bedford, Mass., and previously held key posts in the Office of the Director of Defense. Research and Engineering in Washington, D. C.

Maj. Gen. John L. McCoy, commander of the present Ballistic Systems Division, will become deputy commander for missiles at SAMSO. He will retain his offices at Norton AFB.

Maj. Gen. Paul T. Cooper, commander of the Space Systems Division, will be deputy commander for space at SAMSO. His offices will be at Los Angeles AFS.



HEADED NORTH—Although the shot of Mobile Data Center parked along Pacific Ocean is deceptive, caravan was actually on way north up coast to communicate with Convair's buoy Alpha moored off La Jolla, Southern California. Traveling data center will go as far north as Seattle to interrogate buoy, developed for Office of Naval Research. Upper photo shows Lou Scott at console inside Center.

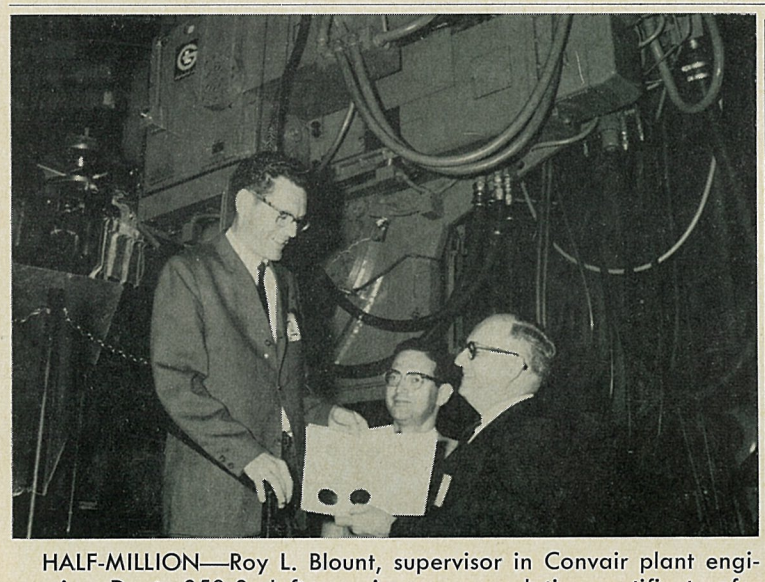
People Mobility

Interdivisional Transfers

(Following are recent transfers among General Dynamics divisions. In parentheses are dates when individuals joined the company.)

M. KENT TRINDEL (1961) from Pomona division to Corporate Headquarters as an internal auditor, assigned to Electronics division; **JIMMIE R. ZAK** (1953) from Electronics, San Diego, to manufacturing control coordinator, Convair division; **HAROLD E. WOLFE** (1947) from Fort Worth to Pomona as engineering logistics representative; **STUART L. LINDSTROM** (1960) from Electronics-San Diego to schedules engineer, Convair; **HARRY T. DILLON** (1952) from Convair to Corporate Headquarters, New York; **WILLIAM M. KASPER** (1965) from Convair to Corporate Headquarters, New York; **BOBBY G. WHITELEY** (1966) from Convair to Fort Worth (Cape Kennedy); **JOHN W. McCLAIN** (1940) from Convair to Fort Worth; **JOHN E. JOHNSON** (1956) from Electric Boat to Convair as design engineer; **W. F. BRILES** (1960) from Electronics-San Diego to engineering staff specialist, Convair.

NOSTALGIC — Pictures and models of Convair products of years past, arranged by Jim Harter and Gordon Jackson, lined walls of Century Room at El Cortez June 8 as Management Club observed 25th anniversary. Center photo: Jack Waskey, first president of Consolidated Foremen's Club, chats with 1966-67 president Larry Sweeney. At right, John Doig, Sweeney and Herb Rubottom (on banjo) lead crowd in Auld Lang Syne.



HALF-MILLION—Roy L. Blount, supervisor in Convair plant engineering Dept. 250-2, left, receives commendation certificates for $555,598 cost reduction from W. J. Stanley, manager of plant engineering. Richard Leonard, center, is general supervisor for Dept. 250-2. One of Blount's cost reduction projects involves use of five-axis numerically controlled milling machine in background.

Numerically-Controlled Machine Will Produce Big C-5 Savings

Roy L. Blount, a supervisor in facility engineering Dept. 250-2, has been awarded commendation certificates for two cost reduction proposals that will save Convair division an estimated $555,598.

The half-million-dollars in savings will result from use of a five-axis, numerically-controlled milling machine and a numerically controlled drill at Lindbergh Field.

Richard D. Leonard, facilities engineering general supervisor, said $421,432 will be saved from one of Blount's proposals under which the five-axis milling machine will be used for production of 216 C-5 empennage parts.

Under previous methods, various milling machines and other tools and many hours of hand work would have been required for the task.

Under Blount's other cost reduction proposal, $134,165 will be saved by use of the numerically-controlled drill instead of three conventional drills for production of 1,760 parts and details.

Time required for producing each part will be reduced from 6.3 to 2.1 hours. Costs for scrap, rework and parts finishing also will be reduced considerably.

Admission Deadline For SC Is July 15

July 15 is deadline for application for fall semester admission to San Diego State College, Convair educational services offices announced.

Employes planning to attend fall semester classes but not already admitted should obtain application forms from the college.

Request for tuition refund for job-related courses must be submitted to educational services within three weeks after the first class session.

George Jacob Named Chief of Data Process

George R. Jacob has been promoted to chief of data processing operations for Convair division, succeeding A. E. Andress who retired this month after 31 years with the Company.

George Jacob

Jacob has been with the Company 24 years, attended the first data processing card punch class in San Diego in 1940, and has been serving as general supervisor of data processing machine operations since 1962.

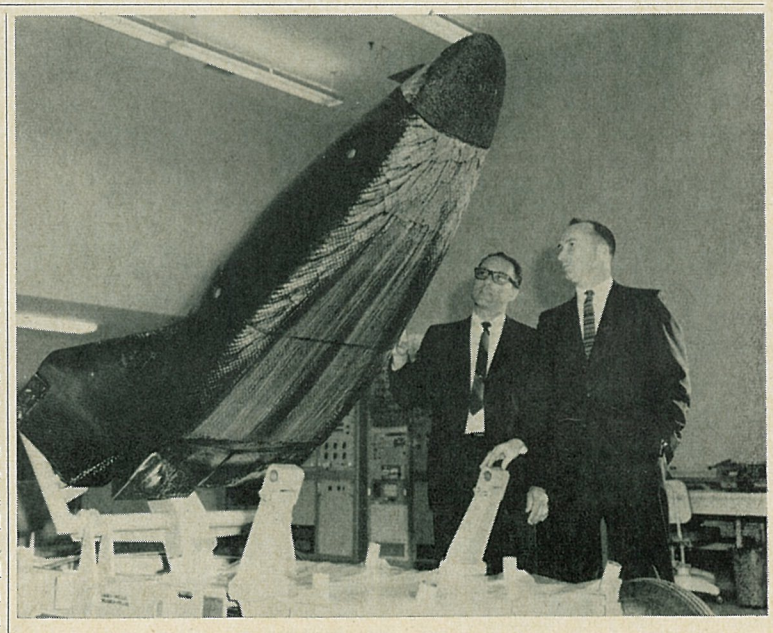
In his new position, Jacob manages the largest data processing operation in the San Diego area with 260 employes including computer operators, electronic accounting machine (EAM) operators, keypunch operators and support personnel. He reports to D. R. Pardee, manager of management systems.

Data processing operations personnel are operating nine major business and scientific digital computers and allied equipment.

Christian Elected To Head Society

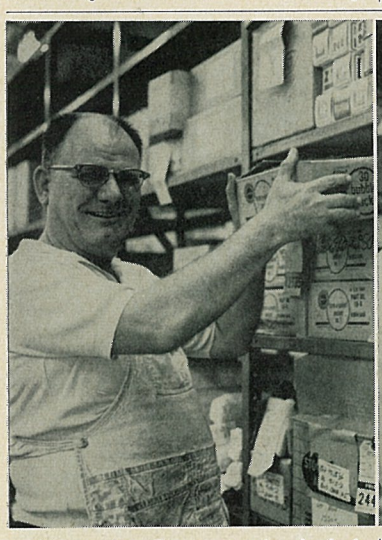
Jack Christian, staff scientist in Convair's Dept. 572-1, has been elected chairman of the San Diego chapter of the American Society for Metals (ASM). Drs. James Kerr and Roy Adsit, both of Dept. 572-1, and Mike Hersh, Dept. 572-2, were elected to the executive committee.

Information on ASM membership and meetings can be obtained by calling Bob Kessler, ext. 2231 KM, or Art Mehner, ext. 737 KM.

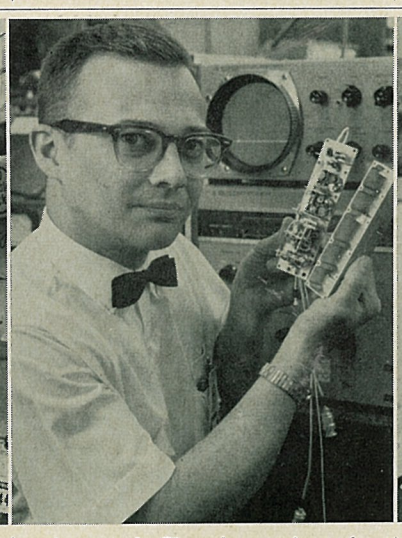


BACK FROM SPACE—Howard Bonesteel, right, and James Minos of Convair's PRIME program office examine third PRIME vehicle, which was launched by Atlas SLV-3 No. 7003 and was recovered after its highly successful maneuvering entry flight down Western Test Range. Postflight tests by Martin Co. in Baltimore showed all vehicle systems in working order. Air Force officials said vehicle could be flown again with replacement of its honeycomb and silicone ablator "heat shield" covering.

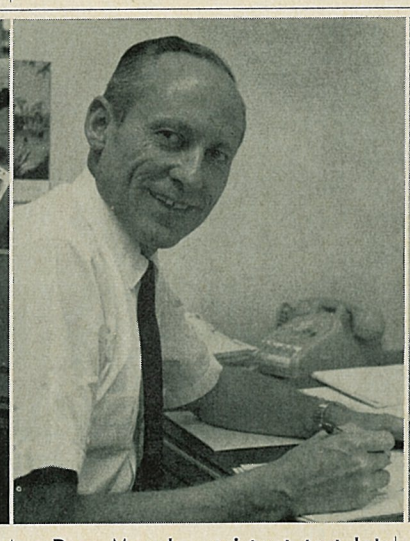
MERIT SCHOLARS—General Dynamics Corporation Merit Scholarship plaques are presented to San Diego area winners Nicholas D. Smith and Catherine Jean Campbell by Jack L. Bowers, left, Convair general manager. Parents observing are, from left, Harold D. Smith and Mr. and Mrs. Sterling Campbell.



Harry La Gant, stock clerk in stores at AF Plant 19, has made the full circle. He started at Plant 19 as a stock clerk in production control with Convair 10 years ago, was assigned to the Westgate site, then with the former Astro division to Bldg. 92 warehouse, and back to Plant 19 two years ago. He has a three-year hitch with the Army to his credit and service with the Air Force during World War II. He lives in the Golden Hill area. His main hobby is photography.

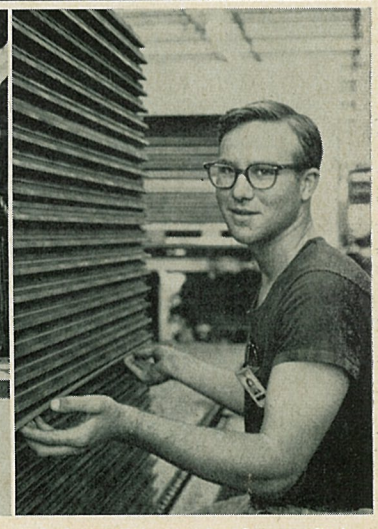


Leonard Clough, senior electronics engineer in Dept. 541-0 at Kearny Mesa, displays first engineering breadboard unit of all-solid-state UHF pulse-power amplifier that he designed for use in Army range measurement system transmitters. Amplifier has its own modulator; will convert a 1-milliwatt input to 30-watt output. Clough, a 1959 graduate of the U. of Minnesota, has been with Convair seven years. He lives in Poway with his wife and two children.



Dag Munck, assistant test lab group engineer at Vandenberg AFB, was born in Silkenbory, Denmark. He was active in the Danish underground movement during the German occupation of Denmark. After the war, he attended the Technical University in Copenhagen, receiving his BSME in 1947. He worked for SAS two years before coming to the U. S. in 1949. He and his wife, Margita, live in Santa Barbara with their children, Hans, 16, Thora, 8, and Dag Jr.

Sele Sifuentes, test engineer in Dept. 579-1 at the Convair structures lab, Harbor Drive Test Site, joined Convair in late 1951. He received his BSME from the U. of New Mexico in 1950. He and his wife, Maria, have four children, Anna, 13, Isabel, 11, George, 10, and Jimmy, 8. They live in the North Clairemont area where Sifuentes keeps busy taking care of his rental property. He devotes as much time as he can to his family, leading his sons' cub scout pack.



Robert Powers is shown fitting lock bars in a stack of airfield landing mats on a pallet as they came off the mats production semi-automated line at Convair's Lindbergh Field plant. Powers has been with Convair since last August as a general helper. He finished Kearny High School last year and lived on Kearny Mesa with his parents. However, that is changed now. He was married June 10 to Kathie Nolan who just finished Montgomery Jr. High. They will live in El Cajon.

IN BALL PARK — Convair's James Adamson checks over proposed contract offered son, Mike (standing), by Baltimore Orioles.

Best Arm

Convair Son Number One Draft Choice

Pitching prowess of Mike Adamson, Convair son, has won him a chance at a big league berth and a college education, all in one package deal.

Adamson, not yet 20, was Number One draft choice of the Baltimore Orioles and is now working out with the Baltimore team on his own while waiting results of contract negotiations. One of the terms of the contract, at his stipulation, will allow him to complete his bachelor's degree in business administration at the University of Southern California where he just finished his sophomore year.

"Mike's been playing ball since he was 8," said his father, James Adamson, manager of Lindbergh Field operations. "He's gone the whole route—through Little League, Pony League, Colt League, and on to high school and then college varsity."

His natural ability and extremely fast ball brought him to the attention of scouts while still in high school. But he turned down a draft from the Philadelphia Phillies at that time to continue his education.

At USC last season he had an 8-3 record, striking out 143 in 103 innings!

He was named to the Pacific Eight Conference's All-Star team this month and was Western League Player of the Year in 1965. Rod Dedeaux, coach at USC, tabbed him as "best unsigned arm in baseball."

Last summer he pitched the non-professional team, Alaska Goldpanners, to champ spot. The Goldpanners took the Invitational Tournament in Hawaii at close of a grinding season without dropping a game. Adamson set a record in one of the play-offs, this one with the Armed Forces All-Stars, when he pitched nine innings giving up only one scratch hit and striking out 21.

According to present plans, he'll continue to attend USC full time, playing summer ball with one of the Orioles' farm clubs.

ROPED FOR RODEO—With Atlas launch vehicle in background, Curt Johnson, Convair operations chief at Vandenberg AFB, ropes Judy Bower before start of annual Elks Rodeo parade in Santa Maria. Others, left to right, are Jim Gardner, Dolores Kennedy, Barbara Lingenfelder, Millie Miller, Minnie Duran, Ann Davis, Louise Deveny, Marilyn Perez, Katy Renollet and Pat Susee.

Young Convair Riders Stage Fun Show With Sixty Entries

A dozen youngsters, all members of the Mountain View Mist Riders and for the most part children of Convair employes, staged a fun show for the CRA Riding Club, June 17, with some 60 entries in equitation and gymkhana events.

Susan Harmer, daughter of Jane and Conrad Nash, swept the field to take high-point trophies in both divisions.

Paula Smith, adult adviser to the young riding group, credited Terry Hyder with success of the horse show.

Mrs. Smith and Marlene Stewart judged equitation classes and Judy Watson was judge for gymkhana classes. Barbara Doom acted as ring steward.

Both adults and juniors competed the following day, June 18, in an all-equitation show held in the CRA ring. There were 138 total entries in 19 classes.

Leo Reed, Vista horse trainer, was judge.

Paula Smith, Jane Nash, Lois Miller and Annette Spencley manned the entry booth. Susan Miller was ring steward; Jay Harmer, announcer. Boyd Spencley was show manager.

* * *

Ken Smith, Judy and David Watson, and Gayle Dvoracek rode in the annual Imperial Beach parade last Sunday, June 25, as the club's Color Guard.

Club members have scheduled a business meeting July 12, 7:30 p.m., in CRA Clubhouse.

Dave Bennett Wins Net Title

Dave Bennett, son of Ruth Bennett of Convair's Dept. 460-0, defeated Tad Yamaguchi of General Atomic in a round robin to take the masters trophy in the CRA Tennis Club's annual spring tournament last month.

Winners of each event received trophies June 15 in an awards ceremony in CRA Clubhouse.

One of the tournament's "highlights" came when Walter Redondo, 8, teamed with his sister, Marita, 12, to defeat Bob and Ann Mawhinney for the mixed doubles "B" crown. Walter also gave players twice his size a hard time in the men's novice singles.

Mike Rabbit edged Dan McLaughlin, 6-2, 6-2, for the men's advanced singles crown, Bob Wheeler defeated Bob Stecker, 6-1, 6-1, in men's intermediate singles and Stan Jones topped Jerry Symanski, 6-1, 6-3, in men's novice competition.

Yamaguchi and Jack Douglas defeated Stan Griffin and Dennis Sealy in round robin play for the advanced men's doubles trophy and Bill Connor and Dave Gorham took the intermediate men's doubles with a win over Don McClarren and Bill Miller, 8-6, 6-2.

Vicki Jensen edged Ruth Bennett, 7-5, 6-2, for the women's singles "A" crown, Babs Borland defeated Diana Story in round robin for the women's singles "B" trophy and Bob and Dot Wheeler defeated Dennis and Hilda Sealey in round robin play in mixed doubles "A" competition.

Iris Oster Wins Women's Golf

Iris Oster won the second annual Ernie Paul Memorial Tournament sponsored by the General Dynamics Women's Golf Club June 10 and will have her name engraved on the perpetual trophy honoring the late Ernie Paul, organizer and mentor of the ladies' golf group. Mabel Dunn won the first tournament last year.

Thirty-six played Mission Bay golf course on tourney day. Only even holes were counted.

First-place trophy in Flight A went to Kathryn Hagley, while Doris Parker won Flight B.

Flight A runners-up were Kathryn Mix, Agnes Sliger, Grace Cottrell, and Freda Magargal. Those in Flight B were Rosalind Fisher, Viola Hirst, Violet Gilbert, and Lorene Waldron. All won gift certificates.

Next monthly tournament will be a nine-hole match at River Valley on July 8.

Installation of new officers was held last week, June 22, at a dinner meeting at River Valley. Taking office were Jean Mishall, president; Florence Kell, vice president; Viola Hirst, secretary; Betty Jackson, treasurer.

On Sale:

Gold-color, Convair monogrammed ballpoint pens, each equipped with both blue and red ink cartridges, are on sale at $1 each at all Convair employe services outlets. Regular Convair monogrammed pen and pencil sets also are on sale at $1 each.

37-ft. House Trailer To Be Sold on Bid

General Dynamics people will have a chance to bid on a 37-ft. house trailer offered for sale through Convair's material sales department.

The trailer is a Great Lakes 1956 model with aluminum exterior and varnished plywood interior. It is equipped with 110-volt electric refrigerator (which also can be used with ice), sink, bath with tub, double and single bed, kerosene heater, dinette set, and evaporative-type air conditioner.

For information call R. H. Lange at ext. 3460 Kearny Mesa.

Meeting on Europe Tours Scheduled

A follow-on information meeting on the coming tours to Europe will be held July 10, 7:30 p.m., Room C, CRA Clubhouse.

Movies will be shown of the itineraries of both of the package tours scheduled for Sept. 30 departure date. The Grand Tour, by motor coach, runs $795 per person; the Capital Cities Tour, by air, is $859.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is July 5. Call ext. 1071 LF or 3322 KM.)

* * *

ARCHERY—Flint-round shoot, July 2, 1 p.m., CRA Range, Kearny Mesa.
BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.
BICYCLE CLUB—25-mile ride to Torrey Pines, July 8. Leave La Jolla Country Day School, Miramar Road, at 9:30 a.m.
BONAIR FLYERS—Meeting changed to July 11, 7:30 p.m., CRA Clubhouse.
BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.
CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.
CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.
FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th and C Sts.
HI-FI—Meeting July 11, 7:30 p.m., CRA Clubhouse.
ICE SKATING — GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.
PISTOL CLUB—Club shoot, July 9, 9:15 a.m., SD Police Pistol Range.
RADIO—Meeting July 6, 7:30 p.m., CRA Clubhouse.
RIDING CLUB—Meeting July 12, 7:30 p.m., CRA Clubhouse. Weekend outing July 15-16, Cuyamaca.
RIFLES—Senior shoot tonight (June 28), 7:30 p.m.; junior shoot July 1, 1 p.m., Gillespie Field Range.
ROCKHOUNDS — Lapidary workshops at both Kearny Mesa and Gillespie Field closed until September.
SCULPTURE — Workshop sessions, Mondays, 7:30-10:30 p.m., CRA Clubhouse.
SPANISH — Tourist Spanish course, open free to all General Dynamics families and friends, 7 p.m., Thursdays, Convair executive dining room, Lindbergh Field.
TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.: Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.
TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.
TRAILERS—Travelers' meeting, July 5, 7:30 p.m., CRA Clubhouse. Outing at Pine Crest July 15-16. Call Virg Marshall, ext. 744 LF.

Salvage Scheduled

Next sales day, Lindbergh Field salvage yard: July 22.

Pylons Drop Biters In Slow-Pitch Loop

Convair slow-pitch National League wound up first-half play last week with 111 Pylons breaking a tie with the Bullet Biters when they met head-on last Wednesday. Pylons took the first-round title by downing the Biters, 8-3.

In American League play GD Bombs and the Gasp squad were tied at presstime with three wins, one loss apiece. Outcome of this week's game will determine the first-half winner.

STANDINGS
National League

Team	W	L
111 Pylons	5	0
Bullet Biters	4	1
GD/E Satellites	3	2
Plant 19	2	3
Adiabats	½	4½
Ballimore Oreos	½	4½
American League		
GD Bombs	3	1
Gasp	3	1
Aereo Lab Playboys	2	2
S-C	2	2
Test Lab	1½	2½
Material Dept.	½	3½

CENTAURS UNBEATEN IN FAST PITCH BALL

The Centaur nine defeated the Spoilers, 5-0, last week to win first-half title in CRA fast pitch ball.

Rudy Lopez pitched the first perfect game of the season to boost the Centaurs to victory. He did not issue a hit or a walk and no one reached first. The Centaurs beat the Cosmos Bums, champs for the last two years, by 6-2 in their game June 18.

STANDINGS

Team	W	L
Centaurs	5	0
Cosmo Bums	4	1
Spoilers	3	2
Underbrush	2	3
Technics	1	4
Hughes	0	5

Woman President Heads Rockhounds For Coming Club Year

Bette Clancy heads CRA Rockhounds as the first woman president of the group. Other officers seated this month were Earl Manor, vice president; Vivian Scroggins, secretary; Mildred Taylor, treasurer.

John Walker was named membership chairman. Gerald Halterman is in charge of entertainment. John Clancy is new field trip chairman, and Adelaied Jones will be bulletin editor.

All General Dynamics people interested in rock hunting or lapidary work are urged to call Walker for information about the club. He may be reached at ext. 2977 Kearny Mesa or home phone, 463-6385.

Membership fees are a nominal $2 per family for the entire year. Anyone who joins the club now gets a half-rate price of $1, for the rest of the year.

No meetings or field trips are scheduled during July and August. Only scheduled activity this summer will be a family picnic the latter part of July. Lapidary shops at both the CRA Clubhouse, Kearny Mesa, and Gillespie Field closed this week for their usual renovation. They will reopen in September.

'Sunday Shortrides' Slated by Cyclists

CRA Bicycle Club is inaugurating "Sunday Shortrides," for those who would enjoy leisurely 10-mile afternoon cycle trips.

Rides will start at 2 p.m. each Sunday from the Islandia Hotel parking area on Mission Bay beginning this weekend (July 2).

"Everyone is invited," Myke Dickey, club president, said. "Each of the routes will be different and will be essentially free of hills. The pace will be geared to enjoying the view and the company."

Cyclists plan a 25-mile ride to Torrey Pines July 8, leaving La Jolla Country Day School on Miramar Road at 9:30 a.m.

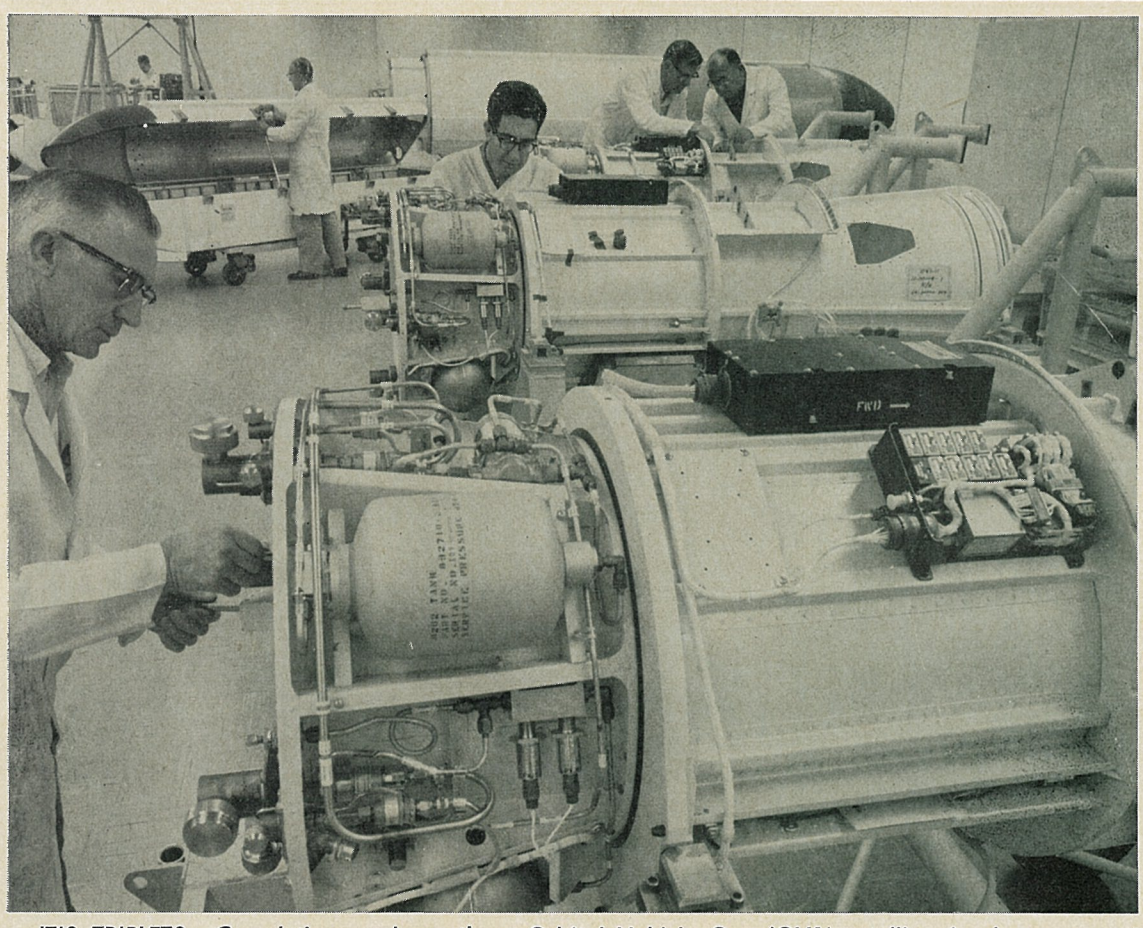
Radio Club Members Join in 'Field Day'

Convair Radio Club members and families, using portable equipment under "emergency conditions" in the mountains near Julian, took part in the Amateur Radio Relay League's annual field day, June 24-25.

The club used the call letters W6UUS/6 in transmitting from Dale Taber's property at 4,500-foot elevation. Trailers, tents and autos were used at the overnight camp site.

DANCE TICKETS NOW ON SALE

Tickets to the Golden Anniversary dance sponsored by North Island NAS this Friday, June 30, are on sale for General Dynamics people at all employe services outlets. It will be in the San Diego Sports Arena. Les Brown and his Band of Renown will play from 7 p.m. to 2 a.m. Tickets are $1.50 each and must be purchased by tomorrow, June 29.



IT'S TRIPLETS—Completing work on three Orbital Vehicle One (OV1) satellites in clean room at Kearny Mesa are, from left, Roy M. Laird, J. D. Easter, Joseph Ballatore, Carl Olson and Stanley J. Gwazdacz. "Sister satellites" have been delivered to Vandenberg AFB and will be lifted into space by Atlas 92D.

Satellite 'Triplets' Sent to Vandenberg

(Continued from Page 1)

tical mile altitude. Each will circle the earth about every 96 minutes.

OV1-11 will be Convair vertistat stabilized and will carry eight experiments for scientific measurements in its orbital environment.

The OV1-12 will have a magnetic stabilization system and will carry 11 experiments for making biologically scientific radiation measurements and detailed spectral measurements of the space radiation environment. Included will be a tissue-equivalent ion chamber to aid in determining affect of space radiation on man.

OV1-86 will house four experiments including a cosmic ray telescope and equipment for radiometric measurements of the atmospheric oxygen mantle. It also will be stabilized by a Convair-built vertistat.

Scientists responsible for experiments on the three "sister satellites" have visited Convair's Kearny Mesa plant for a first-hand look at the way their projects will be integrated for their duties in space.

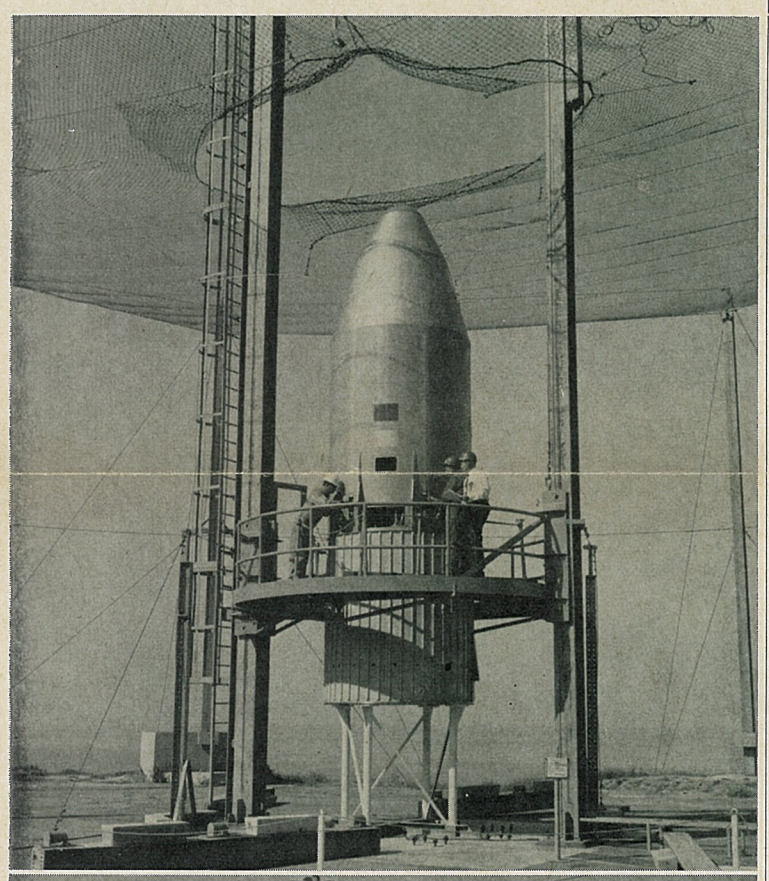
The OV1 program is under the direction of the Air Force Office of Aerospace Research with Lt. Col. C. A. Northcott Jr. as program manager. L. E. Ottem is Convair OV1 program manager. The Atlas boosters are launched from Vandenberg by the 6595th Aerospace Test Wing.

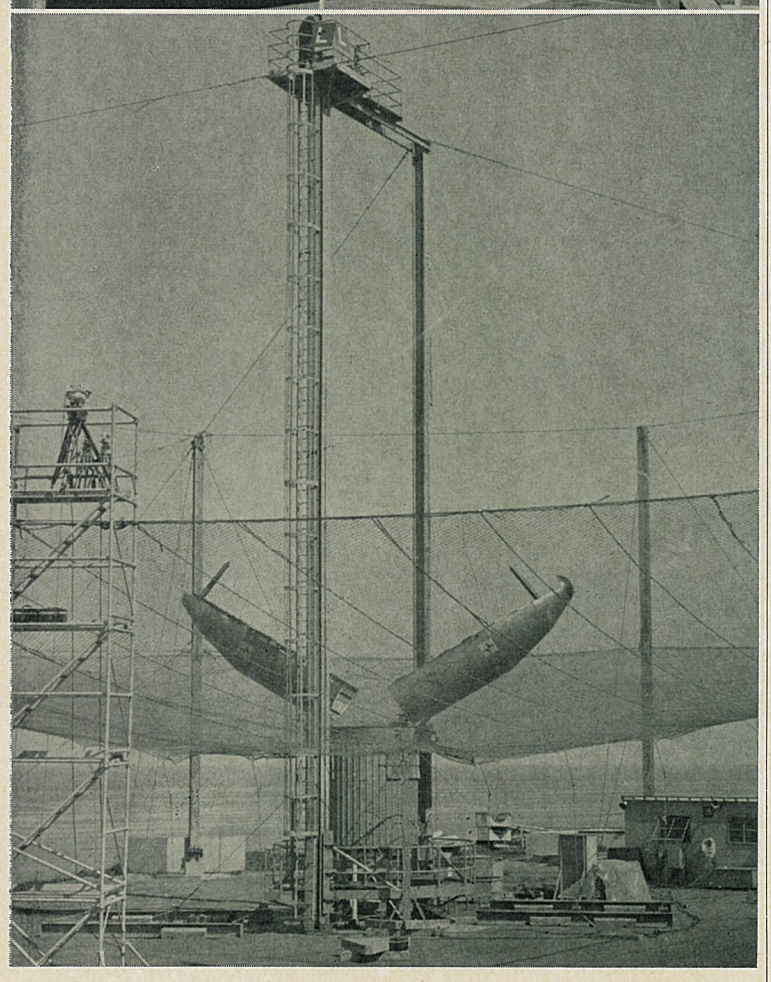
Simultaneous launch of satellites 11, 12 and 86 will be the first "triple header" in the OV1 program. There have been four dual-configuration launches since October, 1965.

The new OV1 fairings, 84 inches in diameter at the base, will be used for the first time in the launch of OV1s 13 and 14 later this year. After being fabricated at Kearny Mesa, the first of the new fairings have been undergoing jettison tests at Point Loma Test Site.

Use of "flight articles" made the test program somewhat unique. The fairing sections were undamaged as they fell into a nylon net during the tests at L Tower at Point Loma. Ray DeWeese was test conductor.

The new fairings will be jettisoned after shielding the OV1s during the Atlas flight through the atmosphere. The "coffin-type" heat shields they will replace were permanently attached to the Atlas and had doors that opened to permit ejection of the satellites in space.





HEAT SHIELD—In top photo, first of new-type nose fairings, which will house Convair OV1 satellites carried aloft by Atlas booster, is readied for jettison tests at Point Loma Test Site, San Diego. In photo are J. R. Estrada, E. J. McInvale and W. J. Cristman. Lower photo shows separation of fairings.

'Fantastically Good' Performance Achieved on Atlantic Flights

Both F-111As performed "fantastically well" during unrefueled flights across the Atlantic and fast-paced flybys at the Paris Air Show.

The variable-wing fighter was also a major attraction while on static display, and the F-111 show in the U. S. Pavilion was easily one of the most outstanding.

These are impressions brought back by Maj. Thomas Wheeler Jr., AFPRO, and Mal Holloway, representative of the Fort Worth division's president's office.

Unofficially, both F-111As cracked a record on the way over. They were the first fighters to fly across the Atlantic unrefueled, using only internal fuel.

"What's more, we had at least 1½ hours of fuel left and could have easily made it to any field in Spain," said Maj. Wheeler, who was with Col. Ray O. Roberts in the Paris-bound F-111A.

Virtually everyone was impressed with F-111A's range demonstration. But Maj. Wheeler was at least equally impressed with the airplane's navigation system.

"We were only a little over a mile off course when we hit the coast of England," he said. "This is a truly incredible navigation feat — like threading a needle in the Atlantic.

"Our system was so accurate that a tanker accompanying us on the flight was constantly asking for navigational information."

Maj. Wheeler spoke with considerable authority. He had previously made 14 flights across the Atlantic in fighters or fighter-bombers. Each of these flights, of course, required refueling.

"This was not only my first unrefueled fighter flight," he said, "but my 'safest'—both from the standpoint of equipment and knowing exactly where I was at all times."

Maj. Wheeler was also co-pilot during the first of two 8½-minute flybys at the show.

"We made a short takeoff — just over 1,800 feet — went into a maximum climb, then turned back and made a low-level pass-over with wings extended. We came back over with wings swept back at about 550 miles an hour, and did several wing sweeps during the flyby and turn."

"Wing-sweeps — in fact, the entire flights — went off without a hitch," the major said.

Holloway, one of several hundred thousand observers who watched the flybys from the ground, said spectators "oohed" and "aahed" when the F-111A leapt from the runway at 1,800 feet — and during the wing-sweep operations.

"They were genuinely impressed," he said. "And so were the thousands who came through our F-111A display in the Pavilion."

The display included a 1/10th scale F-111A model, plus four 1/50th scale models. Movie footage, with French dialogue, showed the F-111A throughout the flight spectrum.

Laymen and aviation buffs alike were intrigued by the display, Holloway said. "We had an unusual number of sophisticated technical queries from members of the international press."

ATLANTIC FLYERS—Crewmen who flew two F-111s across the Atlantic without refueling and using only internal fuel, are, from left: Col. Ray O. Roberts, Maj. Thomas Wheeler Jr., Maj. Robert K. Parsons and Capt. John D. Phillips. In lower photo, greeting F-111A crewmen on their return are, from left: W. C. Dietz, chief engineer-111; J. T. Cosby, vice president-111 programs; and F. W. Davis, Fort Worth division president.

July Fourth Holiday To Fall on Tuesday

General Dynamics people can look forward to a holiday next Tuesday as they, with the rest of the nation, observe the Fourth of July.

Except for necessary maintenance and security functions, work will be suspended at all divisions in the United States. Work shifts will resume as usual the next day, Wednesday.

Savings Bond Buying by Payroll Deduction Boosted to 82 Pct.

Because of continued support of some 8,500 employes and new participation of another 2,700 employes, Convair division has increased its U.S. Savings Bonds participation to 82 per cent.

"We are pleased that our recent bond purchase campaign increased our participation by 20 per cent," Jack L. Bowers, Convair general manager, said.

"Savings bonds are a good investment in the future of our country as well as in our own financial well being."

M. V. Wisdom, director of industrial relations, said the bond campaign, which began in May, brought the total number of division participants to 11,298.

Series E bonds pay 4.15 per cent interest when held to maturity in seven years.

Employes may also purchase the Treasury Department's new Freedom Shares in combination with E bonds beginning with the pay period ending Aug. 6.

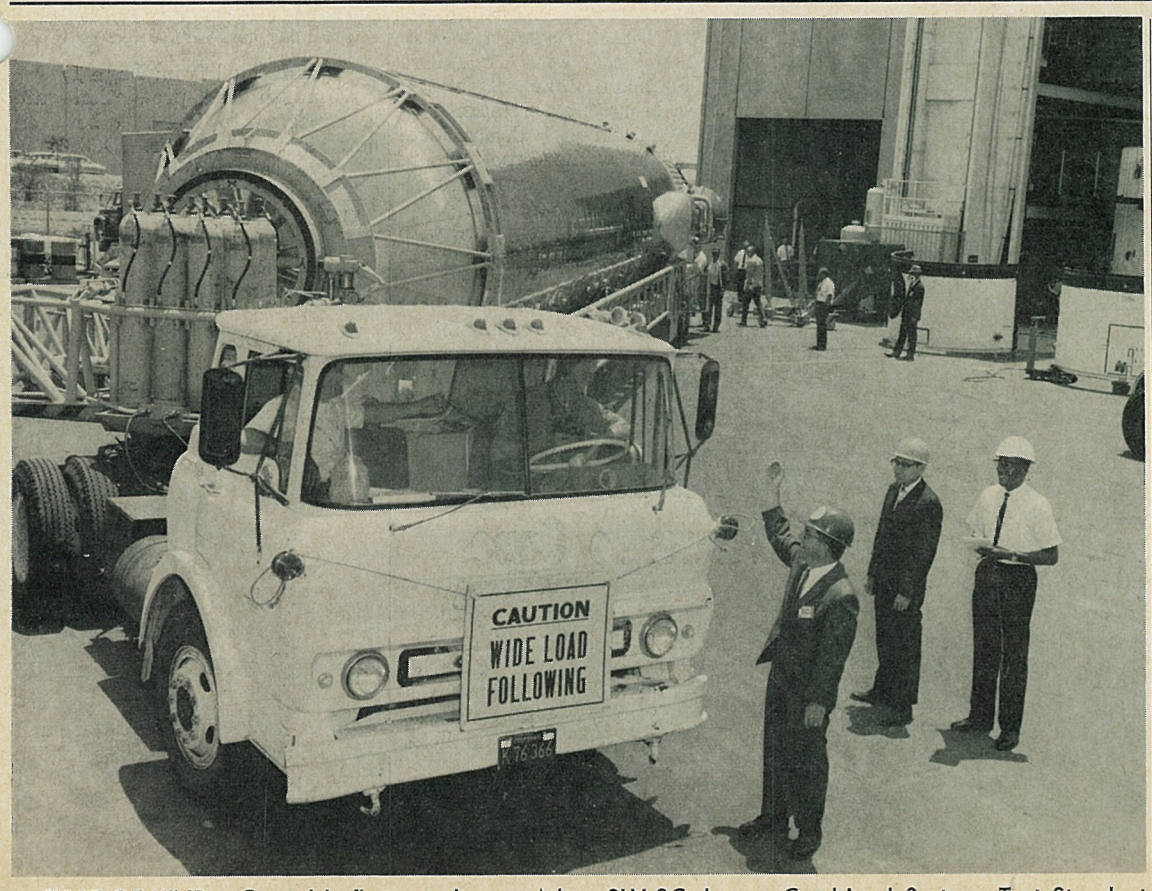
Freedom Shares pay 4.74 per cent interest when held to maturity in just four and a half years.

SAN DIEGO EDITION

GENERAL DYNAMICS

NEWS

Wednesday, July 12, 1967 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, July 12, 1967



FIRST OF KIND—Convair's first new longer Atlas, SLV-3C, leaves Combined Systems Test Stand at Kearny Mesa for flight to Eastern Test Range. Jerry Christ, Convair CSTS acting chief, waves driver on. Behind him are Glenn Dales, NASA CSTS representative, and William E. Foster, Defense Contract Administration Services space systems quality control representative.

Uprated Atlas, SLV-3C, And Centaur Go to Cape

Convair's first Atlas SLV-3C has been shipped to Cape Kennedy following successful completion of combined systems tests with its Centaur upper-stage vehicle and the Surveyor 5 Spacecraft at NASA's Combined Systems Test Stand (CSTS) at Kearny Mesa.

The uprated Atlas (SLV-3C No. 5901C) will be used as booster for the Atlas-Centaur 13 flight to send Surveyor 5 to the moon in September.

Centaur 10D, the second-stage vehicle for the mission, will have a first main engines "burn" of about 7.3 minutes, an orbital coast of up to 25 minutes and a second "burn" of its main engines for about three minutes before the Surveyor spacecraft is released for its quarter-million-mile coast through space.

Surveyor 5 will carry an alpha scattering experiment for compositional analysis of lunar surface material.

The new Atlas SLV-3C booster has a 51-inch longer tank than its LV-3C forerunners and will carry an additional 21,000 pounds of propellants.

Its sustainer engine thrust will be increased from 57,000 to 58,000 pounds and its booster engine thrust from 165,000 to 168,000 pounds—giving it capability for launching an additional 300 payload pounds for Surveyor lunar missions.

When mated at Complex 36B at the Eastern Test Range, the SLV-3C, Centaur and Surveyor

(Continued on Page 2)

Plant Buildings Spruced up

An extensive rehabilitation program now in its second year at Convair's facilities is extending to buildings at Lindbergh Field, Air Force Plant 19, and Harbor Drive Facility where repainting, new lighting, and updating of equipment is taking place.

Work stretching over the next several months will modernize the division's facilities in the downtown San Diego area, according to W. J. Stanley, manager of plant engineering.

At Lindbergh Field plant exterior of the following buildings

(Continued on Page 2)

Follow-on Contract Boosts Mat Output

Convair has received a follow-on contract from Kaiser Aluminum Chemical Corp. for portable airfield landing mats which will carry production "well into 1968," according to C. L. Jackson, program manager.

Convair has been producing mats for Kaiser Aluminum under a contract awarded early in 1966. Last week Kaiser Aluminum announced receipt of a $21.3 million contract from the Department of Army Waterways Station, Vicksburg, Miss.

With receipt of the follow-on work, Convair will step up production on its semi-automated line. A complete third shift of approximately 40 workers will be added in September so that the line will be in continuous operation 24 hours a day, six days a week. At present two shifts are keeping the line going nine hours a day and on Saturdays.

Modifications will have to be made to the line to provide back-up systems for continuous operation simultaneously with maintenance, Jackson said. A new cover welder will be installed and major modifications made in the other welding systems, potting station, and anti-skid application station. All floor-mounted support areas will be revised for fast cleaning underneath the equipment. Critical long-lead items for the bonding process will be procured so that they will be on-station for immediate installation in case of an emergency at any time.

"We are making every effort to see that the line will be in constant operation," Jackson said. "With the accelerated production rate, we cannot afford to be shut down."

The aluminum honeycomb core mats are of a type used for combat zone landing fields in Viet Nam. They measure about four feet square, weigh about four pounds a square foot, and interlock with one another to quickly form fields of any width or length.

G. L. Peyton Elected To National Office

G. L. Peyton of Convair was elected international vice president of operations of the Society for Advancement of Management at the annual meeting in Chicago, Ill., last month. He also was appointed to the Society's executive committee.

Peyton is manager of engineering administration for the Lindbergh Field plant.

Tempo of F-111 Work Steps Up

Major F-111 components being built at Convair under an assist program for its sister General Dynamics division at Fort Worth are moving out of the San Diego production plant on schedule. Direct labor assigned to the work has built up to over 1,000 engineering, tooling, and factory people.

First fixed fuel tank pylon for the FB-111 (bomber) version has been delivered. The next two are due out soon as well as the first pivot fuel tank pylon.

Orders for both the 600-gal. external fuel tanks and pylons to attach them to the craft have been increased substantially over the previous order for 20 FB version tanks and 7 of the fixed pylons and 13 of the pivot pylons. An additional order was given for tanks for the F-111A version.

First FB-111 electronics bay has been shipped and the first 111-K version, for the United Kingdom, will go out on schedule. Shipments for F-111A version electronics bays have been moving out on schedule as have stabilization booms.

Orders for additional fixed armament pylons were placed late

(Continued on Page 2)

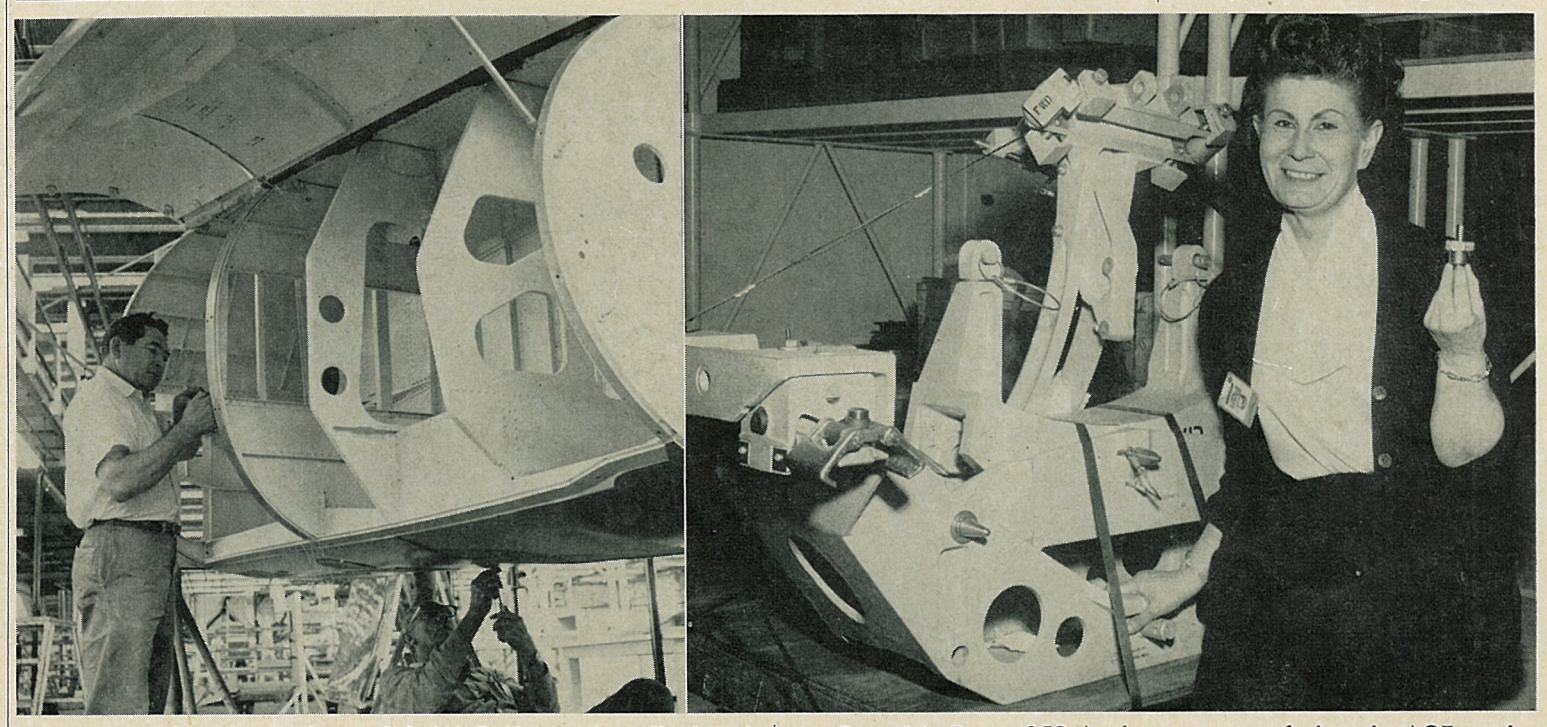
Mgt. Club Sponsors 'Kids Night' Aug. 4

It'll be "kids night" when Convair Management Club stages its annual family picnic and Sports Night at Westgate Park Friday, Aug. 4.

Bats, balls, gloves and every type of sports equipment has been selected just for the youngsters for the raffle which will follow a Texas-size barbecue. Then, families will attend the ball game en masse to see the Padres play the Phoenix Giants.

Tickets at $2.50 for adults and $1.50 for children under 13 go on sale this week.

Material department is sponsoring the family get-together.



F-111 PROGRESS—In shot at left, W. F. Hoover (standing) and V. G. Minor, both of Dept. 027, complete assembly of first electronics bay for FB-111 version before shipment from Convair to Fort Worth division. At right, Aldeen Morrell, planning clerk in Convair's Dept. 059-4, shows range of sizes in AGE equipment Convair is fabricating for F-111, from small coupling she holds to engine support cradle assembly beside her. Convair is fabricating 480 different ground equipment items.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between July 1 and July 15.

Thirty-year: Dept. 195, A. D. Stone.

Twenty-five-year: Dept. 041, J. A. Carrieres; 057, R. D. Howard; 761, S. A. McDonald; 833, E. E. Lamb.

Twenty-year: Dept. 058, E. M. Gross, G. S. Schendel; 149, A. Aguirre, A. G. Blakey; 150, E. J. Boggus Jr.; 193, J. E Henderson; 195, D. L. Schmitz; 400, W. M. Wohlwend; 420, H. N. Booker, J. Moore; 572, P. R. Tyler; R. C. Ferguson; 950, W. D. Daniel Jr.

Fifteen-year: Dept. 031, A. A. Toth; 130, Patricia B. Rauzon, L. D. Slosser; 141, S. Robles Jr.; 144, D. C. Gonzalez, M. C. Rotter; 195, V. M. Echevarria, B. E. Lee Jr.; 250, S. C. White; 401, J. H. Kern, J. P. Kinikin; 451, R. M. Petersen; 515, N. A. Bodwell; 579, R. W. Gilbert; 584, S. A. Campbell; 596, S. H. Logue; 732, W. J. Waller; 744, J. A. Pena; 758, J. B. York; 780, C. C. Reth, J. P. Villarreal; 810, L. J. MacDonald, J. M. Somers Jr.; 832, Harriette F. Alford; 835, E. L. Staats Jr.; 836, Adelia L. Morris; 964, R. J. Blair, D. F. Daniels; 979, J. J. Lennon.

Ten-year: Dept. 015, F. T. Tarantino; 019, I. D. Bellows; 058, W. H. Moffett, C. W. Stevens; 059, T. F. Furtak; 101, Patricia L. Miller; 130, D. M. Crosno; 143, A. M. Contreras; 195, P. L. Pittman, M. F. Stoughton; 250, Q. T. Hazlewood; 506, R. R. Henry; 508, D. L. Fuhrer, P. J. Mole; 511, D. M. Bloxam; 512, F. F. Krohn; 515, J. M. Stabile; 524, Marie E. Sorman; 551, C. A. Howard; 553, V. F. Henke; 565, Naomi L. Ousley.

Dept. 574, D. H. Abernathie, R. B. Hutchinson; 578, R. E. Bailey, J. A. Denney Jr., C. F. Johnson, D. E. Lawrance; 581, D. E. Halford; 584, J. A. Stark; 585, A. Pellino; 588, W. E. Caddell; 589, A. H. Cooper; 592, W. A. Johnson; 595, J. J. Dougherty; 405, G. W. Webber; 420, C. F. Foster; 491, R. P. Dempsey; 733, L. Jones; 763, F. D. Gilliam; 780, E. J. Couture, N. E. Erstad, R. V. Oexner, Maudie Wold; 810, T. A. Crosby; 831, R. P. White Sr.; 832, L. Cox.

Dept. 950, P. Adamson; 966, F. Merino; 967, J. B. Ona, R. A. Wilson; 978, W. J. Christman; 986, H. O. Ehlers, D. H. Lesney; 979, R. E. Baxter, P. S. Byars, J. O. Castle, Doris V. Cooley, L. N. Foley Jr., R. A. Landress, Virginia S. McKay, D. Sarokon, L. M. Shenise; 985, P. T. Cary; 999, R. L. Carlin, R. A. Thompson.

ELECTRONICS

Twenty-five-year: Dept. 422, H. Eigenmann; 616, L. G. Atkinson.

Fifteen-year: Dept. 204, C. F. Jessup.

Ten-year: Dept. 422, F. E. Claudius; 811, R. V. Lipps.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending June 23.

Dept. 002-0, E. F. Jenkins; 143-1, M. E. Howell; 511-6, E. B. Ruttan; 553-2, O. B. Aman; 715-0, J. Friel, V. Harding; 733-0, R. W. McBride; 759-0, G. W. Stacy Jr.; 780-2, J. D. Roper; 820-0, N. Kosmas; 957-0, R. R. Reekers (two awards); 986-5, K. F. Snow.

Employe Suggestion awards approved for the week ending June 30.

Dept. 059-9, T. E. Jensen, V. L. Waitman; 149-1, L. B. Muzzy; 196-0, M. B. Showers; 250-3, G. A. DeMarino; 401-5, R. N. Davis; 762-0, M. P. Jones; 969-2, E. R. Dershem.

Retirements

CONVAIR

GALEENER — Charles N., Dept. 987-0. Seniority date Sept. 26, 1947, retired June 30.

GUTE — Paul J., Dept. 130-1. Seniority date Dec. 17, 1956, retired June 9.

HEROLD — Oscar J., Dept. 460-0. Seniority date May 22, 1957, retired June 23.

JOSEPH — Russell M., Dept. 019. Seniority date Sept. 15, 1947, retired June 30.

LONDON — Elsie H., Dept. 059-0. Seniority date March 2, 1951, retired June 30.

McCABE — Everette L., Dept. 420-8. Seniority date March 25, 1948, retired June 30.

McCOY — Josephine A., Dept. 144-2. Seniority date Dec. 10, 1956, retired June 30.

MINCH — Vernon A., Dept. 979-3. Seniority date Jan. 5, 1959, retired June 30.

PRIDEAUX — Francis A., Dept. 731-0. Seniority date Aug. 31, 1949, retired June 30.

Personals

CONVAIR

Thank you kindly for remembering Lewis. He enjoyed working for Convair very much.

The Family of Lewis Shahan.

* * *

Thank you for your beautiful floral arrangement and many kindnesses following the death of Herman L. Brown.

Mrs. Judy Brown.

Deaths

CONVAIR

BROWN—Herman L., Dept. 143-4. Died June 22. Survivors include his wife, Judy.

BROWN—William T., Dept. 149-2. Died June 27. Survived by wife, Norma R.

HARRIS — Herbert L., Dept. 588-1. Died June 30. Survived by wife, Betty, three sons, Herbert Jr., Guy, and Jeffrey; mother, brother, and stepsister.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N.Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

In-Plant Training

ORIENTATION

NEW EMPLOYES — Educational services staff, Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m. and 4:30 p.m., Monday, July 17; 8 a.m., Monday, Aug. 7. Lindbergh Field, ext. 491, Bldg. 14 auditorium, 4:30 p.m., Tuesday, July 18; 8 a.m., Tuesday, July 25.

PROFESSIONAL/TECHNICAL

SOLDERING CERTIFICATION — Category III, NPC 200-4, 40 hrs. July 24-28. 7 a.m. to 3:45 p.m. Bldg. 17, Room 10, Kearny Mesa. For information contact W. F. Weidenfeller, ext. 1931 KM.

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Rider-Driver

CONVAIR

CAR POOL — Clairemont, University City area to Lindbergh Field, 7:00 to 3:30 shift. Call Jim Sikes, 274-8968.

RIDE WANTED—Lemon Grove to Kearny Mesa plant; 4 p.m. to 12:30 a.m. shift. Audrey Newby, home phone 460-5159 before 3 p.m.

RIDE WANTED — Or share driving from Second St. and Shady Lane, El Cajon. 4:30 p.m. to 1 a.m. shift, Kearny Mesa. LeRoy Meadows, Dept. 452-0. Home phone 444-5286.

Births

CONVAIR

NOLAN—Daughter, Suzanne Marie, 7 lbs., 11 oz., born July 3 to Mr. and Mrs. Terrance A. Nolan, Dept. 454-0.

Plant Buildings Spruced up in Paint Program

(Continued from Page 1)

have been repainted using white with black trim color scheme; Bldg. 13, dye penetrant inspection; Bldg. 17, fire station; Bldg. 14, educational services and medical building; Bldg. 7, plant engineering and tooling; Bldg. 75, anodizing; Bldg. 78, shot peen.

Interiors of Bldg. 5, engineering and office building; Bldg. 1 sheet metal area and area in the northwest corner being prepared for installation of plank skin mills; and Bldg. 69 shop area are being painted. Bldg. 32 is being rebuilt for the main tool crib and small tool repair shop at the north end. Rivet manufacturing is located in the south end.

Visitors' lobby of Bldg. 1 is being redecorated and new signs hung to designate the plant. A lighted sign will go up at the north end of the plant. A sign will be placed on the side of Bldg. 69 fronting the airfield and one on Bldg. 1 facing Pacific Hwy.

Plant-wide projects in process at Lindbergh Field will see all rest rooms and office areas repainted, sprinkler alarm system replaced, also rehabilitation of the electrical distribution and emergency electrical systems, and rehabilitation of the public address wiring and flood light systems.

Catwalks on the roof of Bldg. 5 are being repaired. Floors in Bldg. 1 main aisles will be etched, restriped, and sealed. New fluorescent lighting is being installed in the machine shop, tool room, and drop hammer areas of Bldg. 1 and in the airfield landing mat production area in Bldg. 2.

A general refinishing and refurbishment of office furniture is in progress. Machine tools at Lindbergh Field and Plant 19 are being repainted.

Convair buildings at the Harbor Drive Facility which will be repainted in the overall program are the structures laboratory and adjoining office building, high speed wind tunnel, tow basin, gas flow lab, acoustics test lab, hangar, fuel and oil lab, hypersonic ballistics lab, ion accelerator facility, radiation test lab, burner test facility, and sound suppression lab.

In addition, buildings used by General Atomic and Marine Technology Center are being painted.

A new entrance to Harbor Drive Facility and rehabilitation of fences and yard lighting is also planned, Stanley said. The area will be landscaped and a new sign installed at the entrance.

Salvage Schedule

Next sales day, Lindbergh Field salvage yard: July 22.

Convair Proposes V/STOL For Rescue

Convair division has proposed a high performance, twin-engine V/STOL aircraft using Canadair Ltd. CL-84 technology in response to a U. S. Air Force request for a combat aircrew recovery aircraft.

The proposal designates Convair as prime contractor and systems manager, and Canadair Ltd. as supporting contractor. Production aircraft would be assembled at San Diego.

Material Wins Value Trophy

Material department has been awarded Convair division's "maximum value performance" trophy for May — marking the second time in three months for the department to receive the top award.

The department's savings for May, resulting from 44 cost reduction projects, totaled $1,897,600 and was 289 per cent above the $657,000 departmental goal for the month.

H. E. Moose, director of material, in a letter to all department personnel, said:

"I was very pleased when we were awarded the trophy in March. To accomplish this goal again within two months indicates your enthusiastic approach to your job and your responsibility to participate in the division cost reduction program."

T. R. Henry to Head Prod. Engineering

Thomas R. Henry, former chief of operations support at the Eastern Test Range, has been named manager of production engineering for Convair division.

He succeeds the late William D. Reed who was killed in an auto accident June 17 near Rosarito Beach, Baja California.

Henry has been chief of operations support for Convair at ETR since 1963 and previously served as chief of site engineering there for two years.

He received a bachelor's degree in mechanical engineering from Columbia University in 1950 and before joining Convair in 1961 was employed 10 years as manager of research test operations and as a project manager for Curtiss-Wright Corp. in Pennsylvania and New Jersey.

New Reserve Unit Formed in San Diego

A military reserve unit to augment activities of the Defense Supply Agency, Contract Administration Branch, is being formed in the San Diego area. Organization meeting will be July 28, 7:30 p.m., at the Admiral Kidd Officers Club.

The unit will be composed of Army, Navy, and Air Force officers with backgrounds in procurement, production, contract management, and aerospace maintenance. Officers with other related backgrounds are invited to attend.

Bimonthly meetings will include briefings and tours of local aerospace industries and government activities. Certification of attendance will be given for retirement point purposes.

Convair Daughter Wins Cooking Prize

Kathleen Needles, 17, outdid some of the more experienced cooks with her bread and cake entries in the senior division of the Home Economics food contest at the San Diego County Fair. The first batch of cornbread she ever baked won a first, and her spice cake took a third place. Last year she won a second-place ribbon with her apple pie. Kathleen's father, Gordon Needles, is in Dept. 059 at Lindbergh Field.

Atas-Centaur Poised at Cape For Surveyor 4 Moon Shot

Convair's Atlas-Centaur 11 stands ready to start Surveyor 4 on its mission to the moon from Complex 36A at the Eastern Test Range scheduled for tomorrow.

The Atlas 291D booster for the flight will be the last of the D-series for use with Centaur and the Centaur 7D second-stage vehicle will be the last for single-burn, direct ascent flight in the Surveyor program.

Surveyor 4 is to photograph a proposed Apollo astronaut landing site in the Sinus Medii just northwest of the moon's center point. The AC-11 launch crew will have a four-minute "window" for the launch tomorrow.

G. W. Lucas is AC-11 project engineer. Daniel Sarokon will be launch conductor with Gene Hart, Jerry Johnson, James Sylvester and Don Merritt as assistants.

Convair division had a product review team at the Cape June 28 through 30 to insure launch readiness of the AC-11 vehicles.

Lucas was team captain with J. W. Swigart as Atlas program leader and W. D. Taylor as team coordinator. Other team members and their areas of responsibility were:

Mechanical systems—J. B. Jarman (captain), R. J. Bakke, Fred Anding, F. L. Beale, Robert Edison, M. J. Bebrecini and D. A. Lowe.

Electrical systems — William Shiba (captain), A. V. Bradshaw, Frank Reavell, H. G. Yett, V. C. Walker and L. D. Harber.

Flight Control — Walter Sauer (captain), LeRoy White, F. D. Kunzel, and Dwayne Quinn.

Structures and analytical — G. K. Jerahian (captain), Ray Stoker, Emmett Christenson, J. H. Azeka, J. W. Taylor and J. Q. Wickham.

Uprated Atlas Flown to Cape

(Continued from Page 1)

for the AC-13 mission will have a total height of 117.35 feet.

Jerry Christ, Convair's acting CSTS chief, said combined systems tests of the three vehicles were "very clean" with no holds during the countdown.

The three vehicles were mated electrically for the pre-delivery tests, which help insure reliability and mission readiness.

The Atlas SLV-3C was trucked to Miramar Naval Air Station June 29 and flown to ETR in an Air Force C-133B cargo plane the following day.

Centaur 10D made its flight to Florida July 2 in a commercial "guppy" airfreighter and the Surveyor spacecraft was transported from San Diego June 28 on an Alaskan Airlines chartered plane.

AC-13 will be the second operational Surveyor mission using the Centaur with two-burn, parking-orbit ascent. The first was AC-12 which sent Surveyor to the moon in April. Two previous Surveyor missions, AC-10 and AC-7 were direct ascent flights with single burns of the Centaur engines.

ON-STREET PACIFIC PARKING ARRANGED

On-street parking has been arranged by Convair along the west side of Pacific Highway running in front of the Lindbergh Field plant from the north end of Bldg. 1 to the former air terminal building.

SHOE SAFETY — Ralph R. Dempsey Jr., right, lathe operator in Convair Dept. 731-0 at Kearny Mesa, receives Golden Shoe Club shop button from Jack Kline, general foreman. Fortunately, Dempsey was wearing safety shoes when rotary lawn mower chewed into his shoe. He was uninjured.

Tempo of F-111 Work Steps Up

(Continued from Page 1)

last month and production rate is expected to increase between now and December. Deliveries of pivot armament pylons continue on schedule.

Other airborne elements to be designed and built by Convair will be SRAM (short range attack missile) pylons; weapons bay fuel tanks, both left and righthand. Design is complete for weapons bay pylons and an order is on hand for 46 units for the K version, according to W. S. Stroud, program manager for airborne elements.

Tools have been received at Convair for construction of the Navy integrated pylon for the Phoenix missile. In addition, Convair will fabricate heavy steel wing pivot plate fittings and F-111 detail parts on new equipment now being installed in Air Force Plant 19.

John Berggren, program manager at Convair for F-111 ground support equipment, said that 2,500 different pieces of hardware of 480 items to support activation schedules of the planes have been authorized.

They range from small special fittings to large engine, wing, and fuselage handling and repair fixtures.

So far most of the AGE items fabricated at Convair have been mechanical parts. However, a few electrical items are now on order and there are prospects for orders for electronic test equipment.

Air Group Acquires Equipment, Library

Convair's flying group, Bonair Flyers, has acquired aviation equipment and textbooks for the use of club members.

Such equipment as portable breathing oxygen, IFR (instrument flight regulations) hoods, kneeboards, hand computers may be checked out. Also in the club's growing library are training material for private, commercial, and instrument pilots' licenses, and other textbooks, including one on visualized flight maneuvers.

All flight items and books are available at monthly club meetings, first Tuesday evenings, CRA Clubhouse.

Roscoe to Present Paper in Warsaw

Robert G. Roscoe, supervisor in Convair's Dept. 142-0 standards and calibration laboratories, will present a technical paper at the Fourth International Measurement Congress next month in Warsaw, Poland.

Titled "Economics of Instrument Calibration," the paper will detail methods created by the department to reduce calibration costs 65 per cent without reducing reliability or quality.

Convair Assembler Re-Elected Chairman

Fred Fernandez, an assembler in Dept. 978-0 at Convair's Kearny Mesa plant, has been re-elected chairman of the San Diego chapter of the American GI Forum, a veterans organization that provides scholarships for youths of minority races. C. F. Gonzales of Dept. 566-2 is chairman of the Forum's Region 1.

Nearly Score of Vendors Earn Craftsmanship Recognition

Convair division is awarding Craftsmanship certificates to 17 vendor firms that have delivered defect-free products during a six-month period, bringing to more than 300 the number of supplier firms to receive such recognition since January, 1963.

Certificates are presented personally by Convair division's subcontract management representatives throughout the country, accompanied, when possible, by procurement quality inspectors in the area.

Each certificate is accompanied by a letter of commendation signed by L. I. Medlock, director of reliability control, and H. E. Moose, director of material.

Twenty-eight of the 307 firms that have qualified for the award during the past 4½ years have been repeat winners, receiving an additional gold seal signifying six additional months of error-free product delivery.

The present awards are being made to ADC Electronics Inc., Adams Rite Manufacturing Co., Aeroquip Corp., Beale Container Corp., California Gasket and Washer Co., Consolidated Electrodynamics Corp., Crissair Inc., Fenwel Inc., Guardian Electric Manufacturing Co., Hemet Casting Co., Hi-Temp Insulation Inc., Minnesota Mining and Manufacturing Co., Schulz Tool and Manufacturing Co., Seastrom Manufacturing Co., Swedlow Inc., Sweeney Engineering Co. and TA Manufacturing Corp.

Supplier products qualifying for the awards include magnetic devices, electronic components and assemblies, precision parts, adhesives and sealing compounds, seals and gaskets, wire and wiring assemblies, switches, castings and forgings, circuit boards, bellows assemblies, flex hoses, insulation materials, antennas, valves, electrical sensing devices, machined parts and assemblies and forming and protective processes.

R. J. Hendrickson, chief of procurement quality engineering, said names of certificate winners for each six-month period are determined by computer, based on input information on each part delivered by each supplier and all defects and rejections.

Edward R. Messer, material project administrator in charge of field liaison functions, said the Craftsmanship certificate presentations give the division's subcontract management and quality control representatives in the field "an excellent opportunity to express appreciation to our subcontractors for defect-free products."

Increased knowledge of the program has prompted several supplier firms to inquire about defects when they fail to receive such recognition.

Subcontract management representatives making awards in western states are Messer, James W. Redfield, Peter Nico, and Walter J. Robinson, working out of San Diego, and Edward G. McCleave. George B. Kipe, Daniel Metroka, Paul H. O'Dell, Peppino Masciana, W. P. Conners, and W. J. Galpin, out of Los Angeles. Presentations in other areas of the country are made by Joseph J. Chesna from Chicago, Albert E. Webb from Pittsburgh, Fred E. Jennings from Rutherford, N. J., George P. Walker from Fort Worth, Texas, and Ray W. Hardy from Cleveland, Ohio.

W. E. Magnuson, Craftsmanship program chairman, said more than 150 letters from officials of vendor firms have been received expressing appreciation for awards and promising continued efforts.

"It is not often that we receive a pat on the back and thus it is doubly appreciated," E. A. Diemand, president of the A. W. Haydon Co. of Watersbury, Conn., wrote.

"Recognition of a job well done is always motivation for even greater effort. Your appreciation makes all our lives a little brighter," Robert O. Cooling, president of Titeflex of Springfield, Mass., said.

"With you, we are well aware of the importance of reliability in the systems and components which we supply our customers, and we appreciate indeed your recognition," Jay Rodney Reese, vice president of Texas Instruments, wrote.

Edward C. Burns, vice president of Beech Aircraft Co., said "our future is dependent upon satisfied customers, and the recognition of achievement represented by our certificate is most gratifying."

Roy E. Coats, president of Sunbank Electronics in Burbank, said his company's certificate would be alternately displayed in each department so "all employes may be proud of their efforts."

"I am sure the award will serve as an additional inspiration to continue our best efforts in your behalf," wrote Gordon A. McGannon, vice president of General Aerospace Materials Inc. in Gardena.

S-C AWARDED BIG ARMY CONTRACT

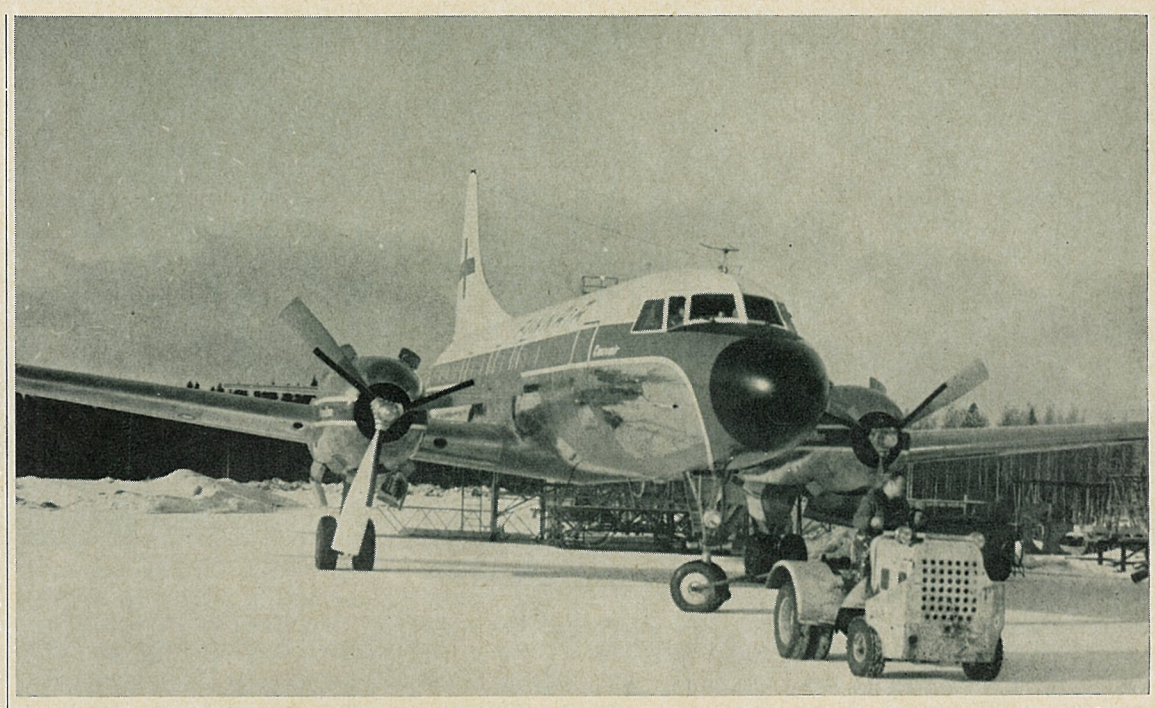
Stromberg-Carlson has been awarded an $8,155,780 contract by the U. S. Army Electronics Command for telephone central office equipment for use in Southeast Asia, Dause L. Bibby, S-C president, announced recently.

The contract provides for engineering, manufacture and installation.

Bibby said the systems will use Stromberg-Carlson commercial equipment of the types currently being used by independent telephone operating companies.

Stromberg-Carlson presently is engaged in a multi-million dollar telephone switching program for the United States Army Electronics Command for Viet Nam and Thailand.

SUPPLIER RECOGNITION—Typical of Convair Craftsmanship presentations to supplier firms for six-month defect-free deliveries is this one at Wyman-Gordon Co. in Worcester, Mass. Daniel Metroka, Convair subcontract management representative, second from right, presents certificate to Robert A. Eddy, manager of product quality, as other Wyman-Gordon officials look on. In background is vertical pivot fitting for C-141 aircraft program.



BETTER THAN NEW!—Finnair mechanics roll out Convair Metropolitan, rebuilt from parts of two damaged planes, following repair job in Helsinki, Finland. Pilots swear it performs better than any other in fleet!

'New' 440 Results From Combining Parts of Two Damaged Planes

Convair-Liners, like old soldiers, never die—they just keep right on flying!

Latest sleight of hand, performed by Finnair, has produced a whole "good-as-new" 440 Metropolitan from salvaged parts of two damaged planes.

In what John Doig, manager of Convair support contracts, described as "one of the biggest repair tasks ever undertaken on a Convair plane," Finnair mechanics at Helsinki, Finland, rebuilt a wrecked fuselage purchased for salvage from the Finnish line, Kar-Air, with a damaged wing from a Jugoslovenski Aerotransport 440.

"Although we've always known that Convairs are practically indestructible, Finnair achieved a monumental accomplishment in the ingenious rebuilding of the plane," Doig said after his return from Finland where he saw the "new" Metropolitan fly this spring.

It went into passenger service April 3 and, according to Finnair's vice president, Bertel Aulin, pilots claim it's the best in the Finnair fleet. Finnair flies eight Metropolitans on its European routes.

The unique rebuilding job came into being last fall when Doig, on one of his periodic customer visits, saw the wrecked Kar-Air 440. The wing of the plane had been damaged beyond repair in a 1963 heavy landing.

He recalled the burned wing from a Jugoslovenski plane stored at Belgrade since 1961. He recommended that the Finnish line buy the wing and restore the wrecked Metropolitan instead of using the parts for replacements or repairs for their other planes.

"An analysis of manhours and parts to put the plane into flying shape, with the Belgrade wing, would cost a fraction of the price of another plane," he explained.

The wing was trucked to Helsinki through Russia last fall and ground crews went into action. They used the entire right section of the wing and rebuilt the damaged section. The rebuilt section was joined to the outboard section of the Kar-Air plane to complete the wing. Parts for wing and fuselage repair were ordered from Convair.

Convair also loaned tools to locate nacelles, and provided technical and engineering advice. Tom Heid, senior structures engineer, inspected the plane and approved the repair job before the plane went into flight test the first of April.

Not a single "squawk" showed up! And, the latest addition to Finnair's fleet now is in constant operation.

Internal Auditors Elect Convair Man

R. E. Carlson, manager of internal audit for Convair division, was elected western regional director of the Institute of Internal Auditors at the institute's international conference last month in San Francisco.

Carlson is a past president of the San Diego chapter and regional vice president for the western area of the institute.

FORTUNE RUNS BRAVO PHOTO

A color photograph of buoy Bravo, developed by General Dynamics for the Office of Naval Research, was published in the June 15 issue of Fortune magazine in an article on "'New Products: A 1966 Sampler."

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers among General Dynamics divisions. In parentheses are dates when individuals joined the company.)

FOSTER C. BOOP II (1959) from Convair division to Pomona as staff assistant in general accounting; **STERLING S. SMITH JR.** (1942) from Convair to quality control engineer, Electronics, San Diego; **WILLIAM H. MORRILL** (1957) from Convair to General Atomic; **JOHN R. LOGAN II** (1961) from Convair to Stromberg-Carlson, Data Products as senior electrical data processing programmer; **LELAND DRESSER** (1950) from Electronics, Rochester to manufacturing engineering general supervisor, Electronics, San Diego; **JACK HAYNES** (1951) from Fort Worth to Pomona as manufacturing control general foreman; **JOE G. MORONES** (1956) from Convair to Electric Boat.

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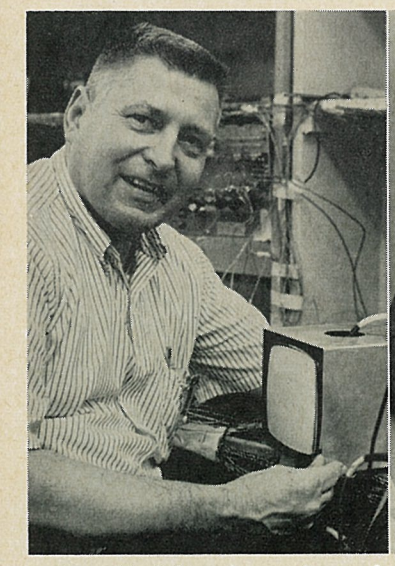
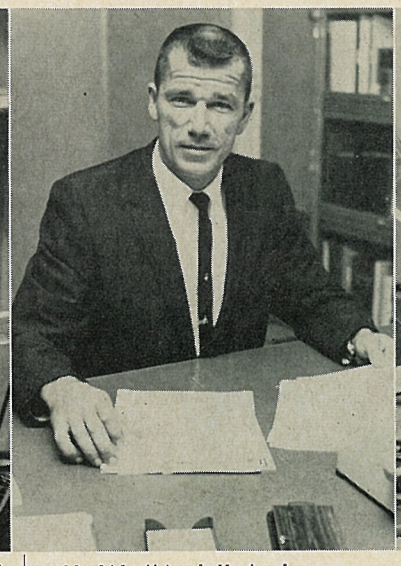
C. L. ROBERTS has joined the comptroller's office at Corporate Headquarters as an analyst. A Yale graduate with an MBA from American University, he formerly was with American Airlines and Manufacturers Hanover Trust Co.

PETER MURNER has joined Corporate Headquarters industrial relations staff. He holds BS and MBA degrees from New York University. Business career includes industrial relations posts with Shoe Corporation of America, Republic Aviation, International Telephone and Telegraph Corp., and Allen B. DuMont Laboratories.

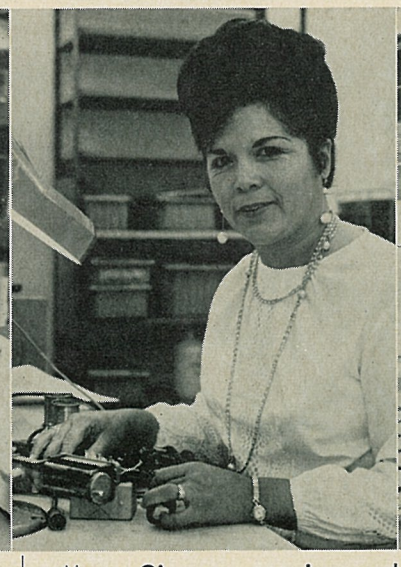
IN ACTION—Shown in Viet Nam is General Dynamics AN/MRC-107 jeep mounted communications center in use by forward air controllers of Tactical Air Command. Controllers, experienced fighter pilots, direct air strikes or parachute drops.



Lee Herink, electronic technician in Stromberg-Carlson Data Products engineering lab, is shown installing a Charactron tube in its casing. Tube is destined for a display unit. Herink has been with General Dynamics 10 years — first at the Palmdale facility, and then for more than three years with the former Astronautics division on the Atlas program. He joined S-C last October. He and his wife, Ella Mae, and four children live at San Marcos.

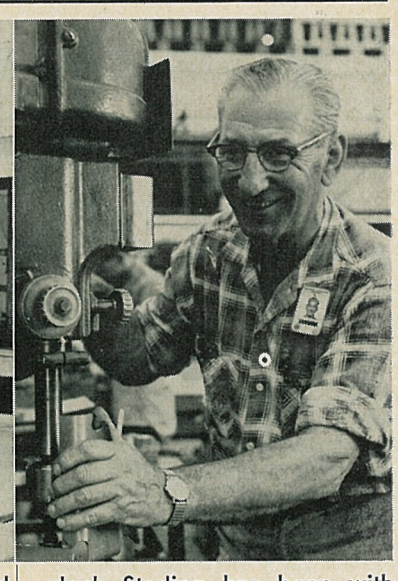


H. W. "Andy" Anderson, assistant site manager at Vandenberg AFB, personifies the adage "to get a job done, find a busy man." He is an expert SCUBA diver, a licensed commercial fisherman, and is now working toward a skipper's license for under-100 T. craft. He holds a commercial pilot's license, an A&E ticket, and was one of the veterans at Edwards Rocket Base in the early R&D days of the Atlas program. He has been with Convair 11 years.



Mary Gimenez, service and repairman in Electronics assembly, has been in electronics assembly work at Convair and Electronics for 15 years. She started in electrical bench at Convair in 1952 and transferred to the Electronics division when it was formed. Her time is taken up with her family, husband, Tony, and children, Alicia, State College senior, Mark, 17, and Cecilia, 10. Her oldest daughter, Patricia, is married now and away from home.

Steve W. Lathan Jr. joined Convair in June a year ago in maintenance but stayed there only a month before transfer to Dept. 401-5 at Lindbergh Field plant as portable tool repairman. He is shown mixing solvent for steam cleaning small parts in the yard beside Bldg. 1. Lathan took the two-year electrician's course at San Diego City College and works on small electrical appliances off hours. He and his wife, Agnes, have two small sons, 2 and 1 yrs.



Jack Sterling has been with Convair over 30 years, joining in the fall of 1936. He started as rope and cable splicer in final assembly and rose to foreman during the war era. After the war he transferred into experimental at Lindbergh Field where he is a development mechanic. He and his wife, Odessa, make their home in the Mt. Helix area. Their two sons, Robert and Jay, are both married with homes of their own. Sterling likes to go fishing when he has a chance.

HI MOM—It was a shock, but a pleasant one for Mrs. Sarah Kelly, right, to pick up her office phone and hear her son's voice coming from other side of world. At left is Convair operator Nellie Gross who helped complete call.

A Special Case

Collect 'Call' From Viet Nam Put Through on Office Phone

It was like any other work day for Mrs. Sarah Kelly, secretary in Convair structural systems, Dept. 961-1, until the phone rang.

"Mrs. Kelly?" inquired Convair operator Nellie Gross. "Your son is on the line."

The thing is, Mrs. Kelly's son is in Viet Nam.

Fireman 1st Class Sean Michael Kelly, 19, was calling from his duty station aboard the hospital ship USS Sanctuary in Da Nang harbor. The "call" was via radio to an amateur operator in Hollywood, who arranged the phone "patch."

Although Convair switchboard operators handle more than 6,000 in-coming calls a day, this was something special and they went out of their way to locate Mrs. Kelly and arrange for the collect call to be charged to her home phone. Unfortunately, though they tried hard, the operators were unable to locate the serviceman's father, John F. Kelly, master schedule analyst in task planning, Dept. 953-1, so that he could get in on the conversation.

The call was part of an organized program linking servicemen to their families with the help of ham operators in the States. During the Sanctuary's first 54 days "on the line" in Viet Nam, some 600 such calls were put through, mostly from patients.

PRECOCIOUS—Richard Baum, 17, right, who has amazed space physicists with his scholarly papers on computer programming, discusses operation of CDC 6400 computer at Kearny Mesa with Convair's Dr. R. M. Leger, left, and Dr. W. J. Schart. He was recent visitor.

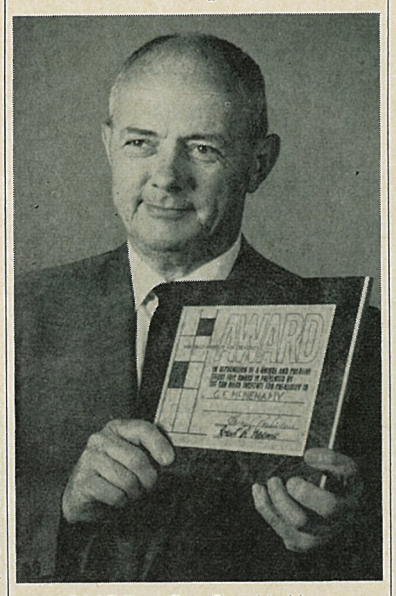
Education Role Earns Award

C. F. McMenamy, Convair research and engineering group engineer, last month was awarded the San Diego Institute for Creativity's first award for creativity in community relations.

The award was in recognition of his services as a representative of industry on several local, state and regional organizations seeking to upgrade excellence in education.

Among other award recipients were five physicians who pioneered open-heart surgery in San Diego and worked with Convair engineers in developing the city's first heart-lung machine.

McMenamy, a Convair engineer since 1945, is chairman of the Community Education Resources Committee which produces kits of materials on new developments in science and industry for school districts in all 50 states.



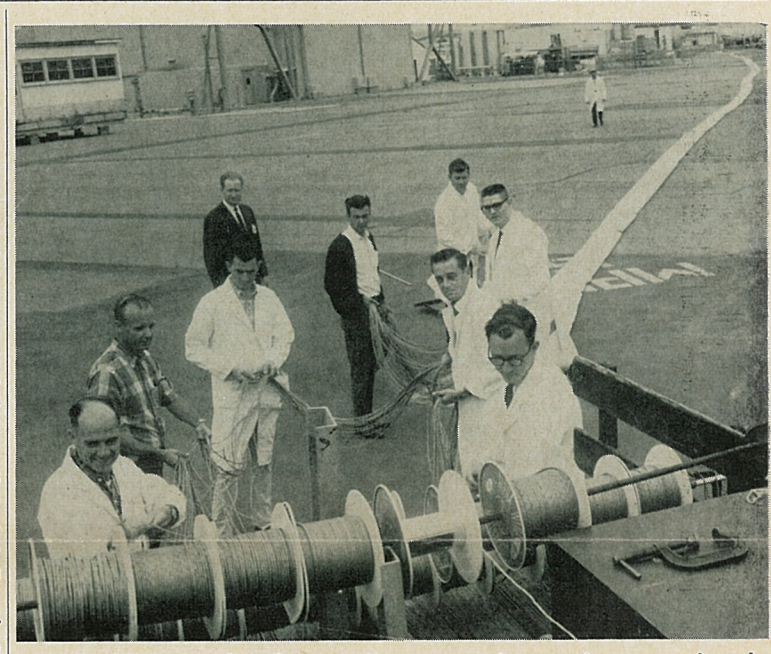
HONOR—C. F. McMenamy, Convair research and engineering group engineer, has been presented award for creativity in community relations.

"Convair has played a key role in providing information and materials for use in supplementing the curriculum," McMenamy said. "This helps offset a 'textbook lag' of up to 10 years."

Data Products Man's Paper Published

D. F. Jackson, sales application engineer at Stromberg-Carlson Data Products, has had a paper published as a section of the proceedings of the 1967 convention of the National Microfilm Association held in Miami, Fla.

Title of his paper was "Direct Microfilming of Computer Output in Dynamic Information Systems."



LINE STRINGING—Convair instrumentation engineers and technicians of high speed wind tunnel make up cable which will serve as instrumentation and control line from new hypersonic facility to wind tunnel control room. Wires were unwound from spools carried on bed of stake truck, and wrapped in paper. Cable later was enclosed in pipe.

Control Cables Laid For High Speed Tunnel

A truck carrying 44 spools of wire on its bed moved slowly across the open area near Conviar's high speed wind tunnel one day recently as a crew of instrumentation engineers and technicians walked behind gathering the unwinding wires together into one bundle.

The total package of 88 cables —each with two conductors—and one other cable of 15 twisted pairs, has been laid as the instrumentation and control line to connect the high speed wind tunnel's new hypersonic leg with the main tunnel's control room.

The 378-ft. line was pulled through 4-inch pipes running between the main tunnel facility and the building immediately south which will be shared by the hypersonic tunnel and the gas flow laboratory. The pipes run part way above ground and part way in open trenches over the 300 feet between the two buildings.

The new 18-inch tunnel will go into operation late this year, W. T. MacCarthy, in charge of Convair's wind tunnels, said. It will be able to test models at speeds in the Mach 8 to 12 range.

The instrumentation line will be tied into the data acquisition equipment in the high speed tunnel's control room. It will transmit data from strain gauges, pressure transducers, and thermocouples on models and such information as air pressure, velocity, temperature, and humidity from within the tunnel itself, explained George Cooper, group leader of instrumentation for the high speed wind tunnel.

Insurance Service Expanded For LF

Complete insurance service for Convair people at Lindbergh Field plant has been set up by employe services in Bldg. 16 office, announced Paul Veal, manager of industrial relations for Lindbergh Field.

All Lindbergh Field insurance claims are processed by Molly Dowell and Helen Knox in the LF employe services office, ext. 1645. Betty Lykins, ext. 430, will continue to handle other employe services functions, including CRA ticket sales.

Planning Director A Convair Visitor

Col. Francis X. Kane, director of advanced planning for Air Force Space Systems Division, was a visitor at Convair's Kearny Mesa plant June 13.

He was briefed on work by the division on maneuverable reentry vehicles, orbital space station, basic sub-system module, advanced ICBM, life sciences, composite structures, and launch vehicle programs, and toured factory and laboratory areas. He also visited General Atomic facilities.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is July 18. Call ext. 1071 LF or 3322 KM.)

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ADVENTURERS — Slide showing on Tahiti July 19, 7:30 p.m., CRA auditorium. Weekend camping trip, Onion Valley, July 21-23. Call Joe Quijada, ext. 2746 KM.

ARCHERY — Practice shoot and instruction July 16, 1 p.m., CRA Range, Kearny Mesa.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BONAIR FLYERS — Weekend fly-in to Lake Havasu, Ariz., July 22-23. For reservations call Red Taylor, ext. 1827 KM, or Lyle Wood, ext. 3210 KM.

BRIDGE — Play each Friday, 7:30 p.m., CRA Clubhouse.

CAMERA CLUB — Meeting July 16, 8 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS — Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS — Meeting July 19 7:30 p.m. Convair cafeteria, Lindbergh Field.

CONVAIRIDERS — 50-mile San Diego tour July 23. Leave Kearny Mesa plant flagpole at 8 a.m.

FENCING — Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB — Meeting July 18.

GARDEN CLUB — Annual Summer Show, July 30, Balboa Park. No meeting in August.

ICE SKATING — GD skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

PISTOL CLUB — Club shoot July 23, 9:15 a.m., SD Police Pistol Range, Home Ave. and Federal Blvd.

RADIO CLUB—Meets July 20, 7:30 p.m., CRA Clubhouse.

RIFLE CLUB — Junior shoot July 15, 1 p.m., Gillespie Field Range.

ROLLER SKATING—Free SD skate night July 17 at Skateland, Front and G Sts. Tickets at employe services outlets.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SOFTBALL — Plant league slow-pitch play Tuesday and Wednesday evenings; fast-pitch, Monday evenings and Saturday mornings, Kearny Mesa field.

SPORTS CAR CLUB — Meeting tonight, July 12, 7:30 p.m., Convair executive dining room, Lindbergh Field.

SQUARE DANCING—Dynamic Eights dance every Thursday, 8-10 p.m., CRA Clubhouse auditorium. Clark Elliott, caller.

SWIMMING — Family swim night, July 15, 7-9 p.m., Mission Beach Plunge. Tickets at employe services outlets.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB — Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

TRAILERS — Road Runners meet July 27, 7:30 p.m., Gillespie Field Clubhouse.

WATER SKIING — Skiing after work Thursday afternoons, 5:30 p.m.; Saturday and Sunday mornings, 9 a.m., Crown Point. Call Harry Eastman, 274-4982.

F-106, F-102 Featured In AF Anniversary Library Memento

Two Convair-built aircraft, the F-102 and the F-106 jet fighter interceptors, are featured in a special memento recently presented to the Harry S. Truman Library.

Scale models of the two planes, together with a model of an F-86 donated by North American Aviation mounted on a large walnut base, were given to former President Truman on Armed Forces Day marking the 20th anniversary year of the U. S. Air Force. Truman created the Air Force as a separate branch of the military in 1947.

The project was sponsored by the Richards-Gebaur Base (Mo.) Community Council. The memento was presented by Maj. Gen. T. K. McGehee, commander of Tenth Air Force at Richards-Gebaur, as symbolic of the air defense role of the base since it was established in 1953.

The F-106, and until recently, the F-102, have been the mainstay of the air defense capabilities at Richards-Gebaur AFB. Charles W. Stevens, Convair field service representative at the base, arranged for the models.

MONTHLY MOVIES STARTED BY CRA

First in a series of CRA-sponsored Saturday movies, arranged especially for Convair children, will be run at the CRA Clubhouse auditorium this coming Saturday, July 15, at 1 p.m.

The Walt Disney technicolor film, "Tonka," story of a horse with Sal Mineo playing the part of an Indian boy, will be first of the monthly film showings. Others will be scheduled once a month if attendance warrants.

Price is 20 cents per person for both children and adults.

Convair Products Photos on Sale

A collection of file photos on Convair products, space vehicle launches, etc., is on sale at 10 cents each at the division's still photo lab, Kearny Mesa.

Employes may visit the lab at the northeast corner of Bldg. 4 to look through available prints and select those they wish to purchase.

Lake Havasu Fly-in Set For July 22-23

Bonair Flyers are taking reservations now for a fly-in to Lake Havasu on the Colorado River for the weekend of July 22-23.

Anyone interested in the trip, either as pilot or passenger, should call Red Taylor, ext. 1827 KM, or Lyle Wood, ext. 3210 KM, immediately to reserve accommodations.

The flying group will stay at the Wings Motor Motel in Lake Havasu City, Ariz. Rates are $12 per day a person, plus $2 for each additional person. Large rooms for four people are $18. All rooms are air condiitoned.

Air transportation will run from $10 to $15 per person, depending upon the type of aircraft. Lake Havasu is about 200 air miles and two hours by small plane from San Diego.

Swimming, water skiing, fishing, or just loafing will fill the weekend.

Gardeners Grooming Dahlias For Show

Convair gardeners are grooming their dahlias for the annual Summer Show scheduled for July 30 in Balboa Park's Floral Association Bldg.

This year's show is expected to top last year's which drew some 1,000 separate dahlia entries, according to Co-commissioners Everett Henderson and Gene Zimmerman.

Although the late summer event highlights dahlias, exhibitors also show citrus and deciduous fruits, vegetables, flower arrangements, and corsages.

Entries will be accepted the day before the show from 7 to 9 p.m. and on show day from 7 to 11 a.m. The public is admitted free from 1 to 6 Sunday afternoon.

BASE SHOW—Young lady at left was among 1,000 visitors to Vandenberg AFB for "ABRES Open House."

Weekend Camp Trip Planned

CRA Adventurers will combine hiking and fishing with a weekend of overnight camping July 21-23 at Onion Valley public campgrounds more than 300 miles north of San Diego.

Most of the group will leave San Diego after work Friday, July 21, and make camp at Onion Valley, located at 9,200 feet in the High Sierra wilderness, about midnight. The campgrounds are 15 miles from Independence, which is on Highway 395 about 315 miles north of San Diego.

A hike with back packs is scheduled at 9 a.m. Saturday and short excursion hikes and fishing on Sunday. Joe and Kay Quijada will be trip leaders, Additional information can be obtained by calling Quijada at KM ext. 2746 or (home) 284-0883.

"Living in Paradise," a 60-minute slide show on Tahiti, will be featured at the Adventurers meeting at 7:30 p.m. next Wednesday, July 19, in CRA Clubhouse auditorium. James Pratt, who spent several years in Tahiti, made the slides and will be narrator.

Final CRA Drawing Scheduled July 28

Last CRA drawing for tickets to Padres baseball games this season will be held July 28.

All entries deposited in baseball drawing boxes up to Thursday, July 27, will be eligible for tickets to one of the 15 games to be played in August.

Entry slips are limited to one per person. They must include name, division, plant, department number, shift, and plant phone extension.

Deposit boxes are at Convair, Stromberg-Carlson, and Electronics employe services outlets, engineering mailroom in Bldg. 51 at Lindbergh Field, office of H. C. Medearis at AF Plant 19, and the CRA Clubhouse, Kearny Mesa.

CRA Sponsoring Trip To Watch Dodgers

Tickets for a July 30 CRA-sponsored trip to see the Dodgers play the Phillies in Dodger Stadium are on sale on a first come-first served basis at CRA Clubhouse at Kearny Mesa and the employe services office in Bldg. 16 at Lindbergh Field.

Cost is $5 and includes round-trip bus transportation and admission with seating in a shaded area. Buses will leave at 9:30 a.m. from the flagpole at Kearny Mesa and from the parking lot north of Bldg. 19 (Sassafras Street at Pacific Highway) at Lindbergh Field.

'ABRES Open House' Attracts Thousand at Vandenberg AFB

More than 1,000 employes, family members and friends got a close-up look at Atlas launch vehicles and toured the ABRES-A launch site June 18 during the "ABRES Open House" at Vandenberg AFB.

"Everybody had a great time," E. J. Galbos, Convair industrial relations chief at Vandenberg and open house committee chairman, said. Convair, associated contractors and the 6595th Aerospace Test Wing were hosts.

Contractor displays were set up in Missile Assembly Building 5. Coffee, fruit punch and cookies were served and 1,000 helium-filled balloons were distributed to the younger set. Air Force and contractor representatives briefed visitors on displays and distributed product brochures.

The open house was planned in part as a "farewell" for Air Force crews being phased out of the ABRES program.

Husband and Wife Teams Tie in Bridge

Mr. and Mrs. Robert Rustad and Mr. and Mrs. Howard McCullough tied for first place honors in CRA Bridge Club duplicate bridge play June 30 in the CRA Clubhouse.

Ray Eichmann and Lee Weikum were winners in June 23 play with Mr. and Mrs. McCullough second, Gil Crowell and Stella Christy third and Don Leistico and C. A. Miller fourth.

Duplicate bridge is scheduled each Friday at 7:30 p.m. New players are invited.

50-Mile San Diego 'Cook's Tour' Planned by Hardy CRA Cyclists

Convairiders have scheduled a unique 50-mile San Diego cycle tour Sunday, July 23, leaving the flagpole at the Kearny Mesa plant at 8 a.m.

The cyclers will take Clairemont Mesa Boulevard and Ardath Road to La Jolla, pedal through Mission Bay and Point Loma, take Harbor Drive downtown then go through Balboa Park and Mission Valley on the way back to Kearny Mesa.

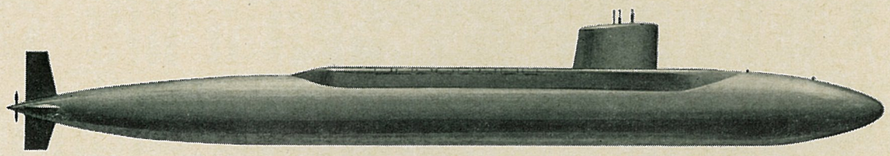
Short afternoon rides also are being scheduled at 2 p.m. each Sunday, leaving from the Islandia Hotel parking lot, to provide opportunity for new members and friends to enjoy leisurely paced group cycling.

Twenty-eight members of the club and their families enjoyed a weekend of camping and cycling June 23-25 at CRA's Pine Crest resort in the Cuyamaca Mountains. Several members completed 60 miles on rides during the weekend.

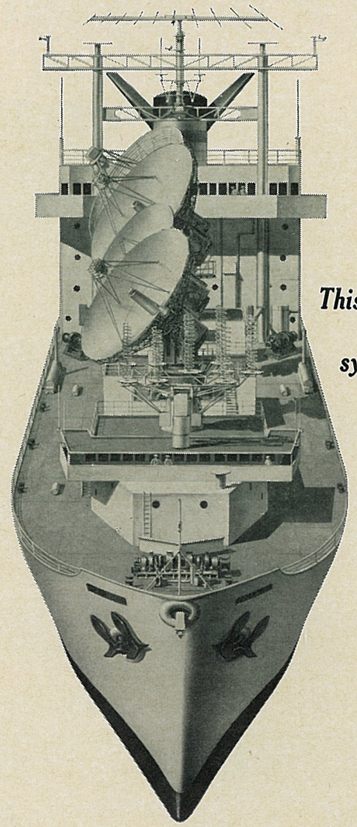
BOMBS TAKE TITLE IN FIRST-HALF PLAY

GD Bombs deluged the Gasp team to take first-half title in American League play of CRA's slow-pitch softball season. Score was 10 to 2. GD Bombs and Gasp went into their final game tied with three wins, one loss.

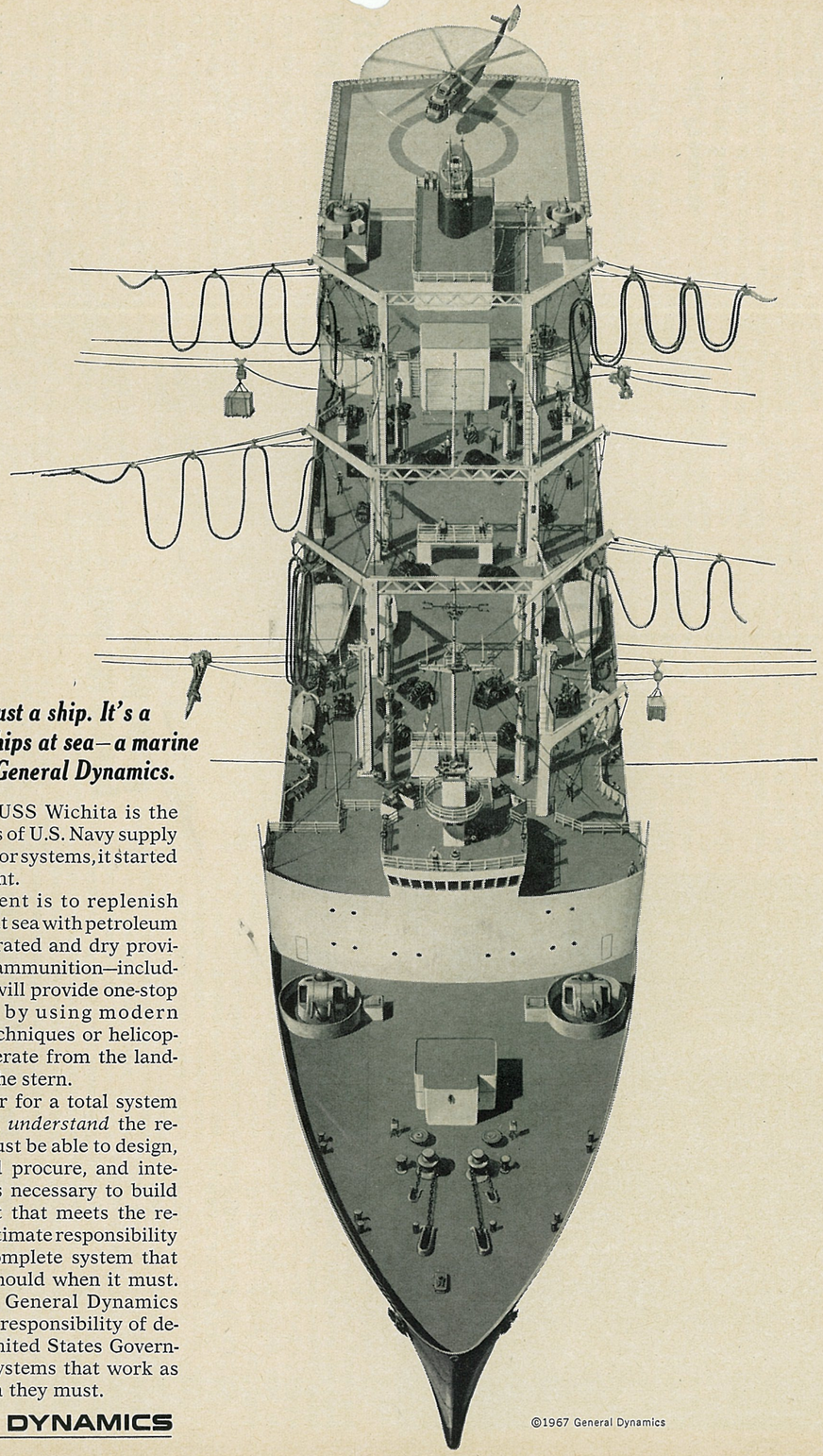
MOUNTAIN CYCLING—Pictured during Pine Crest weekend are Convair cyclists, from left: Gregg and Gail Dickey, Brian Loucks, Mrs. Marilyn Dickey, John Hamilton, Ross and Stratton Loucks, Mrs. Rivers Burnett.



This is not just a submarine. It's a nuclear-powered undersea missile base— a marine system built by General Dynamics.



This is not just a ship. It's a spacecraft tracking station—a marine system built by General Dynamics.



This is not just a ship. It's a supply depot for ships at sea—a marine system built by General Dynamics.

The 659-foot USS Wichita is the first in a new class of U.S. Navy supply ships. Like all major systems, it started with a requirement.

Its requirement is to replenish operating forces at sea with petroleum products, refrigerated and dry provisions, food and ammunition—including missiles. She will provide one-stop replenishment by using modern transfer-at-sea techniques or helicopters that will operate from the landing platform on the stern.

The contractor for a total system must, first of all, *understand* the requirement. He must be able to design, and develop, and procure, and integrate whatever is necessary to build the total product that meets the requirement. His ultimate responsibility is to deliver a complete system that will work as it should when it must.

For 68 years, General Dynamics has accepted the responsibility of delivering to the United States Government complete systems that work as they should when they must.

GENERAL DYNAMICS

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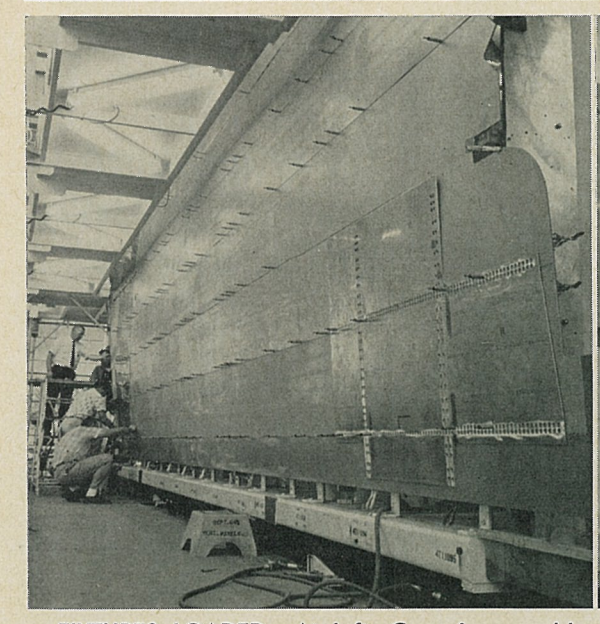
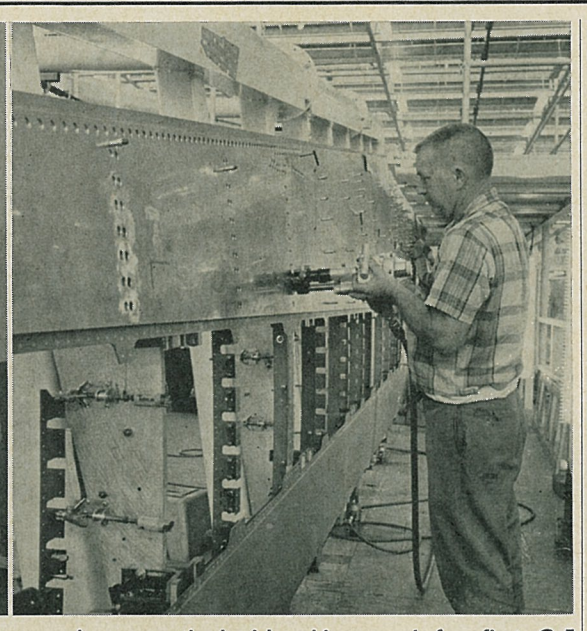




FIXTURES LOADED—At left, Convair assemblers work on vertical side skin panel for first C-5 empennage under construction at Convair. At right, Dick Maddox uses Spacematic drill to drill holes in horizontal stabilizer skin panel for titanium fasteners. It takes just 4 seconds to drill and countersink hole!

Landing Mats Team Praised For 'Outstanding Performance'

Convair's airfield landing mats team has been recognized for "outstanding effort that exceeded all production expectations" as it was singled out for the first "Outstanding Performance Award" given in the division's Craftsmanship program.

The inscription on the plaque awarded by Division Manager Jack L. Bowers went on to read ". . . and proved that quality goes hand in glove with quantity in a high-volume production program."

In awarding the plaque to C. L. Jackson, program manager, for the entire mats team in a July 11 presentation in the Lindbergh Field production area, Bowers said, "We must first of all, have good quality, but for the future of any program, we must also have good performance.

"This program is particularly important to the division in showing that we can cope with new types of products and new methods of production."

He praised performance which he described as aiding Convair in obtaining a follow-on contract from Kaiser Aluminum Chemical Corp. Convair is fabricating 5 million square feet of aluminum honeycomb core matting for Kaiser with the follow-on contract to extend work into 1968.

Bowers went on to say: "Too, you may take great satisfaction in contributing to something that is needed sorely at this particular moment. These mats are now being used in quantity in Southeast Asia."

Difficulties of developing an entirely new mat concept, the manufacturing system to build it, and meeting fierce competition from other companies, were pointed up by Jackson.

"There were many times when we were stopped completely," Jackson said. "And, often we felt that 'it couldn't be done.' But, we would back off and take another approach. Thus, with the help of many functions, we are solving each of our problems and now have a smoothly running line, with very little down time, and a production rate running well over contract schedules and expectations."

Many of the manufacturing methods, well beyond the "state of the art," developed at Convair especially for mat production over the last six years are now accepted as standard practice,

(Continued on Page 2)

OUTSTANDING—C. L. Jackson, airfield landing mats program manager at Convair, holds aloft Outstanding Performance plaque, first to be awarded in division's Craftsmanship program. Jack L. Bowers, division general manager (at lectern), made presentation July 11. Mats semi-automated production line is in background.

C-5 Skin Panels In Fixtures At San Diego

Skin panels for the first C-5 empennage in production at Convair division went into the fixtures this month.

Right and lefthand side panels for the vertical stabilizer are being assembled and rib rails and bulkheads installed in the vertical side skin panel fixture. They will move to the large fixture for mating about Aug. 1.

Trailing edges and the pivot fitting will also be loaded in the mating fixture for proofing with the stabilizer.

First horizontal stabilizer skin panel is also being assembled in the horizontal panel fixture. Upper and lower surfaces will be mated in the box fixture the first week in August and moved to the mating fixture in flat position.

Panels for the second ship's set will go into the fixtures as soon as components for the first empennage move out.

High Accuracy Achieved on AC-11 Flight

Atlas-Centaur 11 sent Surveyor 4 on its flight toward the moon July 14 with such accuracy that only minimal mid-course correction was needed.

The launch was delayed one day to permit removal of the spacecraft and correction of a minor problem in an electrical plug in the Centaur propellant utilization system.

Deane Davis, Centaur program manager, said Robert H. Gray, director of unmanned launch operations at Kennedy Space Center, and other NASA officials commended Convair personnel for action in locating and solving the problem.

Daniel Sarokon, Convair launch conductor, said countdown for the flight proceeded "in story book fashion" with one 29-second hold to increase liquid hydrogen propellant level. Liftoff also was 29 seconds into the launch window.

At the Cape from Kearny Mesa for the launch were Davis; L. E. Lightbown, chief design engineer-launch vehicle programs, and G. W. Lucas, AC-11 project engineer.

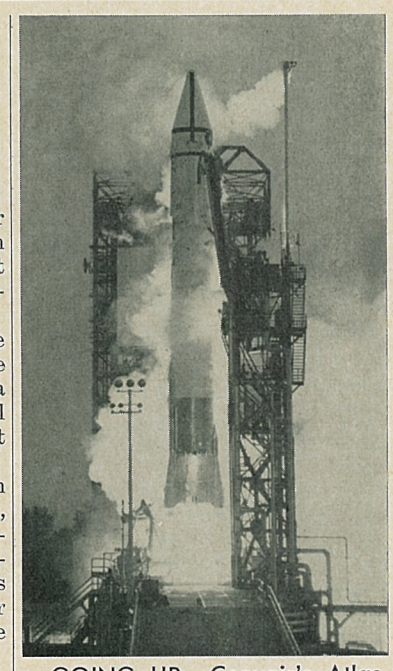
The launch marked the 33rd consecutive successful Atlas space booster flight. It was the last Atlas D series booster with Centaur and the last planned direct ascent flight with a single burn of the Centaur engines for the Surveyor program.

Davis, Lightbown, Sarokon and Robert Benzwi of Convair were at Jet Propulsion Laboratory in Pasadena July 16 for the scheduled spacecraft landing.

All communications with the spacecraft were lost after its retro motor had fired for 40 of its scheduled 42-second burn.

The Atlas-Centaur 13 flight to send Surveyor 5 to the moon later this year will use Convair's first Atlas SLV-3C as booster.

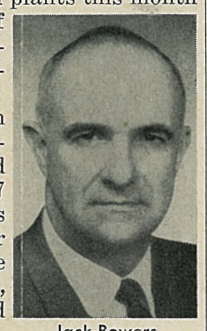
Sarokon said Complex 36A is being converted to accommodate the 51-inch longer booster.



GOING UP—Convair's Atlas-Centaur 11 is shown at lift-off July 14, starting Surveyor 4 on journey to moon.

Bowers Reports on Division Progress Toward 1967 Goals

Jack L. Bowers, Convair general manager, addressed supervision at both Kearny Mesa and Lindbergh Field plants this month in a "state of the division" review and forecast.



Jack Bowers

The division is moving satisfactorily toward most of its 1967 objectives, as well as longer range Corporate goals, he said, in both sound business foundation and organizational development. Continuation and expansion of present programs offer a stabilized base from which the division can move into major new prime programs, he said.

Bowers reported the status of a score or more of programs in-being and detailed accomplishments in several major areas, with predictions on possible future developments.

Copies of the introduction to "Convair 1967 Long Range Plan," which was presented to Corporate officials last month, were distributed to supervisors with Bowers' request that they pass along pertinent information to their employes.

★ ★ ★

Continuing a policy put into effect last year, Bowers this week began a series of informal meetings with groups of employes in work areas at both Kearny Mesa and Lindbergh Field.

The gatherings offer Bowers opportunity for frank discussions of division performance and objectives.

The meetings are expected to continue for about three weeks.

Stone Named Convair Space Sciences Mgr.

Dr. Kenneth A. Stone, who holds three degrees in electrical engineering from the University of Michigan, has been named manager of space sciences for Convair division.

Dr. Stone

He reports to W. E. L. Boyce, director of research and information sciences, and has responsibility for space sciences Dept. 596-0's space physics, gas surface physics, advanced propulsion and plasma physics, theoretical physics, chemical physics, aerothermo chemistry and laser and optics systems laboratories.

Stone first joined Convair in 1952 to work on dynamic analysis and analog computer studies for F-102 and Sea Dart hydraulic control system. He later was a senior engineer for the former Astronautics division, involved in dynamic problems related to the Atlas missiles.

Stone returns to Convair following a period with the International Telephone and Telegraph Co.'s aerospace systems laboratory in San Fernando as director. Previously he was laser systems program manager for Autonetics division and manager of systems engineering for Space and Information Systems division of North American Aviation.

In addition to receiving his bachelor, master and doctoral degrees from Michigan, he instructed at the University for seven years.

As manager of space sciences he succeeds Dr. Hideo Yoshihara who now serves as staff specialist to John M. Wild, director of engineering technologies Dept. 570-0, where he will devote full time to development of advanced aerodynamic concepts.

$1 Savings Offered on Circus Tickets

General Dynamics people may start reserving tickets for "the greatest show on earth" at a dollar off regular prices, through CRA arrangements.

Convair Recreation Association has obtained a block of seats for the Aug. 20 performance of the Ringling Bros. and Barnum and Bailey Circus in the San Diego International Sports Arena. Show time will be 6 p.m.

Discount price for General Dynamics is $3 for $4 seats and $2 for $3 seats.

Reservations are now being accepted at employe services outlets at Kearny Mesa, Lindbergh Field, Plant 19, Stromberg-Carlson, and Electronics facilities.

Tickets will be on sale at these locations by the first of next week.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between July 15 and July 31.

Forty-year: Dept. 191, C. N. Crocker.

Twenty-five-year: Dept. 027, V. G. Minor; 140, E. G. Callard; 149, J. C. Marries Jr.; 250, G. J. Buck, B. R. Hisaw; 300, W. A. Brinkley; 400, R. J. Came; 401, A. Munn; 420, T. E. Hughes; 761, L. A. Gillett; 780, F. Budz; 831, C. B. Ward.

Twenty-year: Dept. 001, D. J. Colesanto; 015, D. H. Smith; 016, Dolly A. Sankovich; 143, R. H. Cunningham; 401, J. Popp; 566, V. D. Winslow; 733, W. B. Paine, Helen H. Sharp; 835, O. R. Linhardt; 840, Helen A. Mackes; 966, Lorraine L. Welter; 985, W. T. Black, C. H. Towner.

Fifteen-year: Dept. 015, C. Bajema; 115, T. G. Fleming Jr.; 144, Naomi C. Smith; 194, F. S. Mascari; 195, R. L. McClendon; 250, A. Masiero, Alma P. Mokres, C. E. Moor Jr.; 300, W. E. Carriker; 400, Dorothy M. Scannell, L. Zang; 401, L. V. Millerd, S. P. White; 454, J. T. Powell; 508, M. D. Perkins; 524, Gladys K. Speed; 565, D. L. McClarren, R. E. Wilson; 756, R. H. Daniel; 831, Helen H. Kuentzel, J. J. Zagami; 835, B. Heincy, R. D. Thompson; 840, R. H. Bertram, Henrietta L. Ross; 860, F. Cicalo; 954, W. W. Johnson.

Ten-year: Dept. 015, A. A. Addison; 020, B. B. Davis; 057, R. C. Dishong; 058, J. P. Mathis; 059, Alice D. Maidment, D. T. Romero; 101, Virginia J. Amon; 142, D. E. Burgess; 145, H. B. Sturtevant Jr.; 149, W. H. Zarp; 170, R. L. Diener, D. R. Rickert; 250, A. Oddo, W. H. Ogden; 300, R. P. Kullgren; 410, F. E. Schwinn; 512, E. H. Haupt; 524, L. C. Fagan, Sarah Petty; 551, A. L. Ickstadt, G. V. Reardon; 572, R. R. Pettyjohn; 574, W. A. McBrayer; 578, D. W. Suttie; 587, D. M. Sealey; 590, C. K. Anderson; 596, M. A. Schmidt.

Dept. 780, Lucy M. Chadd, G. E. Lovec, R. L. Porter, R. G. Stone; 831, W. R. Williams; 842, H. W. Fuller; 951, J. R. Detwiler; 952, J. E. Niesley; 957, Norma J. Phillips; 965, B. R. Foushee; 966, Judith A. Alden, B. A. Appleby; 979, O. D. Brown, C. J. Beverlin, G. L. Callon, T. A. Curry, Mildred L. Hagan, H. S. Hufham, J. C. Merritt, R. L. Watkins; 985, J. G. Beaton, S. H. Griffin Jr.

ELECTRONICS

Twenty-five-year: Dept. 711, M. M. Reeder; 921, S. S. Smith Jr.

Twenty-year: Dept. 422, C. W. Osborn.

Fifteen-year: Dept. 513, G. Zendejas.

Ten-year: Dept. 613, R. A. Grygar.

STROMBERG-CARLSON

Ten-year: Dept. 80, N. M. Bartlett; 84, M. L. Byrd.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Monday, Aug. 7; Lindbergh Field, ext. 491, Bldg. 14 auditorium, 8 a.m., Tuesday, Aug. 8; 4:30 p.m., Tuesday, Aug. 15.

PROFESSIONAL/TECHNICAL

HI-TEMPERATURE SOLDERING — Several 16-hr. classes will be conducted on soldering procedures using Sb-5 and Sn-10 covering Convair and Fort Worth specs. Classes will begin about mid-August. For information call Dick Forrest, ext. 1931 Kearny Mesa.

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Also available are the following management programmed texts: Principles of Management, Basic Supervision of People, How to Conduct a Selection Interview, How to Improve Your Supervisor Skills, Basic Skills in Communications, On-the-Job Training, Cost Reduction and Control for Supervisors, Inventory Management, Effective Interviewing for Supervisors, Improving Your Written Communications, Improving Your Supervisory Error Reduction Skills.

CITY COLLEGE COURSES

Lindbergh Field: Mondays starting Sept. 11. Introduction to Supervision, 4-7 p.m., Room 8, Bldg. 14. Instructor, Hal Rubin. Registration on first night. For reservations call educational services, ext. 491 LF.

Kearny Mesa: Mondays starting Sept. 11. Industrial Economics for Supervisors, Room 1, Bldg. 17, 4:30-7:30. Instructor, Donn Olsen. Wednesdays starting Sept. 13. Human Relations "A," Room 1, Bldg. 17, 4:30-7:30 p.m. Instructor, Hall Rubin. Registration for both classes at first sessions. For reservations call Diana Johnson, educational services, ext. 1931 KM.

Papers Presented

CONVAIR

MAWHINNEY—R. F., Dept. 115-0. "Systems Approach to Post Boost Propulsion Selection." ICRPG-AIAA Second Solid Propulsion Conference, Anaheim, Calif., June 6-8.

MIYAJI—M. C., Dept. 572-3. "Auditing Microscopic Particle Analyses." American Society for Testing and Materials Annual Meeting, Boston, Mass., June 26-29.

Papers presented at American Astronautical Society 1967 National Symposium "Apollo and Beyond," Huntsville, Ala., June 11-14:

SHAUL—John B., Dept. 986-4. "Mariner Mars 1969 Inflight Guidance Equations."

TRAMONTI—L. G., Dept. 583-0. "The Effect of Finite Thrust on the Synergetic Plane Change."

Papers presented at ISA/13th National Aerospace Instrumentation Symposium, San Diego, June 13-16:

BOYCE—G. D., Dept. 967-7. "Improving Confidence in Time Samples Measurements."

FRENCH—R. S., Dept. 592-0. "RATER and LOGIT; a New Approach to Crew Performance Assessment."

WICKHAM—John, Dept. 958-6. "Transducer Failure Effects on Vehicle Operations."

Awards

Employe Suggestion awards approved for the week ending July 14.

001-0, H. G. Mondy; 059-7, L. J. Horstman, P. J. Hardisty (two awards); 130-8, J. H. Cooper; 130-9, J. F. Matthews, W. G. Parsell; 141-4, R. K. Pierce; 142-1, T. L. Lamoureux; 144-0, J. F. Choitz; 146-4, J. R. Frogge; 149-2, F. R. Porter; 149-7, B. J. Moore, 250-5, J. H. Gahagan; 401-4, R. G. Kautzman, 454-0, P. A. Kaneyuki; 518-0, G. C. Gonzalez; 519-0, M. M. Engle; 572-4, L. Heyn; 578-1, C. C. Crush; 733-0, L. M. Jones, H. Staten Jr.; 759-0, P. R. Adams, P. P. Standley; 761-0, C. W. Neal (seven awards), L. Spurgeon (two awards); 831-0, G. Lewis; 840-1, W. R. Teran; 860-0, H. C. Leppart; 957-0, J. A. Madden; 979-6, C. E. Moore.

Invention Disclosures

CONVAIR

BAXTER—G. I., Dept. 491-0. Venturi Effect - Wing/Fuselage Design.

BERTHELET—J. T., Dept. 170-2, Slide-Finder Photographic Filing System.

GRIGGS—M. and S. KAYE, Dept. 596-0. An Efficient High Purity Ozone Generator.

ROBERTS—L. W. and F. G. SCHULTZ, Dept. 511-6. Drafting Line Gage.

WRENCH—E. H., Dept. 581-1. Improved Gravity Gradient Orientation System.

Personals

The family of Ed Skinner (retired 1964) gratefully acknowledges your expressions of sympathy.

Mrs. Mary Skinner and son.

* * *

We are deeply grateful for the thoughtfulness of our Convair friends for sending flowers, cards and expressions of sympathy at the recent loss of our husband and father, W. D. "Bill" Reed.

Dee, Steven and Valerie Reed.

CONVAIR

I can not find the words to express my thanks to all my Convair friends, especially those in Depts. 191, 196, and 521-6, for their thoughtfulness, generosity, and sincere concern for my welfare.

Helen Sievers.

* * *

I wish to thank all my Convair friends for the beautiful floral arrangements, prayers, Mass cards, and thoughts during the recent death of my mother, Mrs. Peter Steffes.

Jeanette Spoden, Dept. 196-0.

* * *

We wish to thank the many friends at Convair for their kind expressions of sympathy at the loss of my father. Your thoughtfulness is deeply appreciated and will long be remembered. Thank you again and God bless you.

The E. B. Beeson family.

Rider-Driver

CONVAIR

RIDE WANTED—From North Clairemont to Lindbergh Field, 7:00 to 3:30 shift. Call Betty Reeves, home phone 273-5150.

RIDE WANTED—From Clairemont Mesa & Rolf Rd. to Lindbergh Field, 7:00 to 3:30 shift. Call H. P. Crook, ext. 644 LF.

Big Crowd Expected For 'Baseball Night'

Tickets are going fast to the annual Baseball Night for Convair Management Club families Friday, Aug. 4, at Westgate Park, report club Boosters.

A catered barbecue starts at 5:30 p.m. Free beer, soft drinks, and peanuts will be furnished by the club.

Hundreds of dollars in prizes for both children and adults will go in the raffle. Children will draw for baseballs, footballs, caps and other sports equipment. Prizes for adults include trips to San Francisco, Las Vegas, season tickets to sports events.

Management Club families will then watch the Padres play the Phoenix Giants from lower box seats at 8 p.m.

Price for barbecue and game admission is $2.50 for adults and $1.50 for children. Material department is sponsoring.

Toastmaster Club Installs Officers

New officers of Dynamic Toastmasters Club 457 were installed July 6 in ceremonies in the Bronze Room in La Mesa.

They are James M. Leland, president; Joseph B. Rathfon, educational vice president; Richard G. Bowen, administrative vice president; Harold J. Albright, treasurer; Herbert Bickley, secretary; and Richard Smith, sergeant at arms.

Ezra Johnson, Toastmasters area governor and a supervisor in tool engineering Dept. 420-1 at Kearny Mesa, was installing officer.

General Dynamics News

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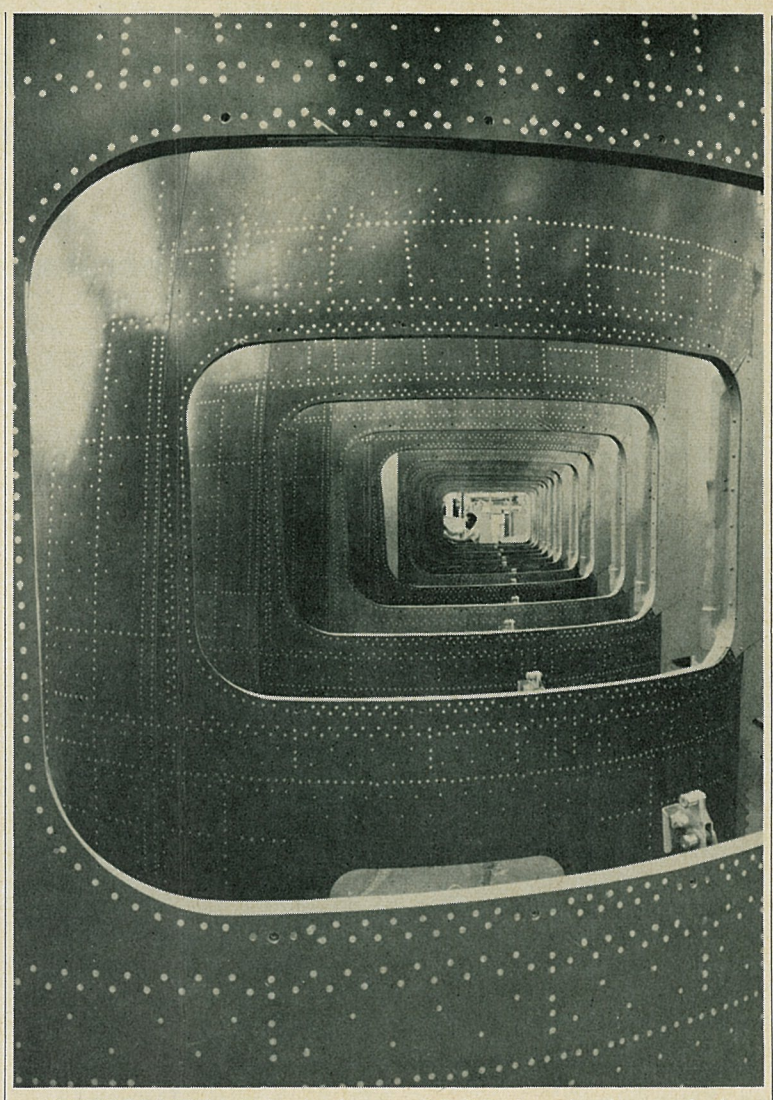
Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.



"TELESCOPED"—Baker's dozen of DC-9 door jamb panels form a tunnel with Leo Lopez, Convair assembler, at the small end checking serial numbers. Convair is building 55 service doors and door jambs under a subcontract from Douglas Aircraft.

Landing Mats Team Praised For 'Outstanding Performance'

(Continued from Page 1)

Jackson said. He listed automatic welding and adhesive bonding as two.

Equipment on the line is geared to turn out one complete article every minute and, during recent operations, the average rate has been close to the mechanical limit!

In emphasizing the team effort that has made the mats program a successful and profitable one for the division, Jackson said that production, quality control, and maintenance play equally vital roles.

Roy Gilliland, manager of reliability control at Lindbergh Field, explained that quality control of mats production differs radically from the system used in conventional aerospace programs where emphasis is given to product inspection.

"The semi-automated nature of the line makes it possible to rely on craftsmanship, process control, preventative maintenance based on failure data analysis with an inspection audit of the finished product. Continuous destructive testing on a sampling basis and statistical analysis of data has given project management a working knowledge of the mats' functional quality."

And, concluded Jackson, production and quality control are helpless "if the line isn't running."

Maintenance on a scheduled basis, preventing failures, is mandatory in a system of this kind.

The walnut plaque bearing the Craftsmanship seal on white tile was passed by Jackson to George Carroll, mats production foreman, who has played a major role on the program since its inception, for display in various sections.

Wives Reserve Seats For 'Day at Races'

Convair Wives have reserved seats in the Del Mar Clubhouse Terrace for a "day at the races" on Aug. 2.

Price of $3.25 a person includes admission to the clubhouse area and the race track.

Families and friends are invited to join club members. For tickets send check and stamped self-addressed envelope to Mrs. W. V. Ohland, 181 Minnesota Ave., El Cajon, Calif. 92020.

More information may be obtained by calling 442-5714 or 583-2868.

GD Patent Display Put on Exhibition

A General Dynamics' patent display, featuring models and photographs of various Company-developed products, is being exhibited through Aug. 4 in the cafeteria at Convair's Kearny Mesa plant. It will be shown later at Lindbergh Field.

The exhibit was featured in a U.S. Department of Commerce patent display last year in Washington, D.C., and has been on display since at various General Dynamics divisions.

Two 990s Undergoing Center Service Check For Charter Airline

Convair Service Center is servicing Convair-built 990s recently purchased by Modern Air Transport from American Airlines.

Modern Air Transport, affiliated with Gulf American Land Corp. of Miami, Fla., is a supplemental air carrier, flying chartered flights within the United States, to Alaska, Hawaii, Mexico and Canada. It is buying five of the American Airlines' 990s.

The two 990s now in charter service with the airline are going to the Service Center's field operations for periodic maintenance checks at the end of flights, approximately every 25 flying hours, and for service checks after 225 flying hours, according to E. J. Huntsman, Service Center manager.

Representatives from Modern Air Transport monitoring checks are headed by Tom Lombardo, director of technical operations. Others include Dee Edwards and Lars Larson, quality control; Bob Gibson, maintenance foreman; Rod Duncan and Dick Shields, field coordinators; and Lou Benfante, maintenance mechanic.

Tough Customer

Shot Into Space, Dunked in Sea, Centaur Unit Is Still Perky

A relay assembly and battery for a Centaur fairing pyrotechnic system used in the Atlas-Centaur 8 launch April 7, 1966, was checked this month after being found washed up on a beach in the Bahamas. (It was attached to fairing material that gave it buoyancy.)

John Schlentz, a research and development technician in Convair's airborne electrical test lab, said the relay still works and the battery, originally with 35-volt output, registered 7/10-volt!

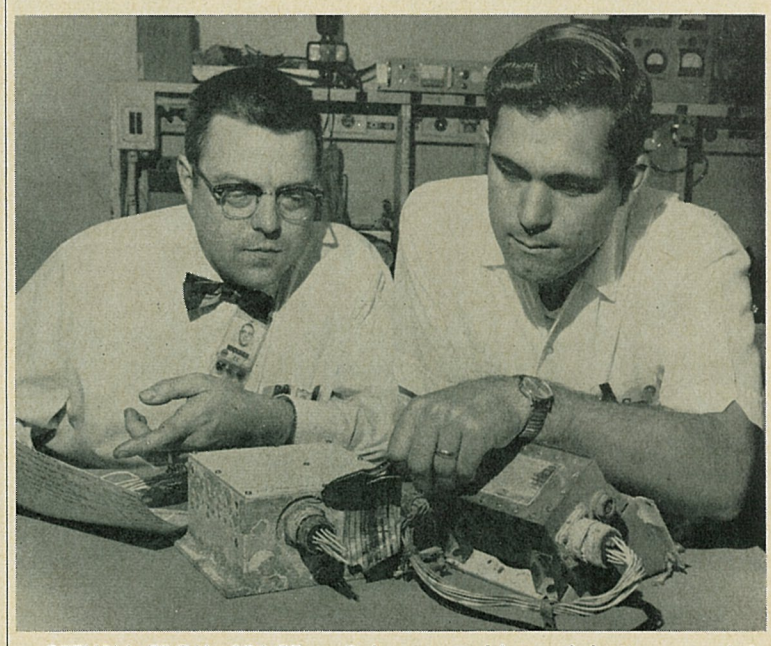
Another small section of AC-8 insulation panel was found June 11, 1966, at Hopetown Harbour beach in the Bahamas by Carl Ruegg, a Selma, Calif., businessman, who flew it home in his private plane.

Paul Green, chief of administration support-launch vehicle programs, returned the section to San Diego and Ruegg later visited Convair as a guest of Deane Davis, Centaur program manager.

Davis said several buoyant fairing sections have washed ashore in the Bahamas. An AC-6 panel also was recovered in the Atlantic Aug. 21, 1965, by the destroyer Dupont.

Convair's biggest "fairing mystery" came when an AC-7 fairing was recovered south of Cocoa Beach on the Florida coast. Investigators eventually concluded it had been blown several hundred miles by a hurricane.

The latest find, a fairing section from the AC-9 flight last October, was found at Harbour Island in the Bahamas by Ruth Mort, a vacationer from Rochester, N. Y. It was recovered by personnel from the nearby ETR Eleuthera station and flown back to Cape Kennedy.



RETURN FROM SPACE — Relay assembly and battery used in Atlas-Centaur 8 flight April 7, 1966, are examined by John Schlentz, left, and Fred Thrasher in airborne electrical test lab after being found in Bahamas and returned to Convair.

25 Years Later

Survivors Retravel the Road They Walked on Death March

The old road on which American soldiers made the Bataan Death March 25 years ago hasn't changed much. It's still lined mostly with tall grass and lazy, rural villages.

But Camp O'Donnell — where the march ended — is gone. In its place is a U. S. Navy radio station and a new real estate development. Only a nearby plaque serves as reminder.

Such were the impressions brought back by Bob Geis, Fort Worth division Dept. 62-6 project aerosystems engineer, following a two-week visit to this World War II battle site.

He was among 500 Americans who had defended Bataan and Corregidor in 1942 and who were returning — 25 years later — to commemorate the event.

REVISITED—Fort Worth Division's Bob Geis, survivor of Bataan Death March, shown during return to scene, 25 years later.

Twenty-five years ago, Geis was among about 55,000 Allied soldiers who made the Bataan march on foot. This time, they rode air-conditioned buses much of the way.

Geis, a first lieutenant in command of the 24th Field Artillery Battalion when Bataan fell, said his most exciting moment came near the end of the trip.

"Thousands of people were there to greet us, and most of the kids were waving little U. S. flags. The cheering and clapping reached a crescendo that was almost deafening.

"It was one of the most electrifying moments of my life. And I'll guarantee you that tears came to the eyes — or lumps to the throats — of every old timer there."

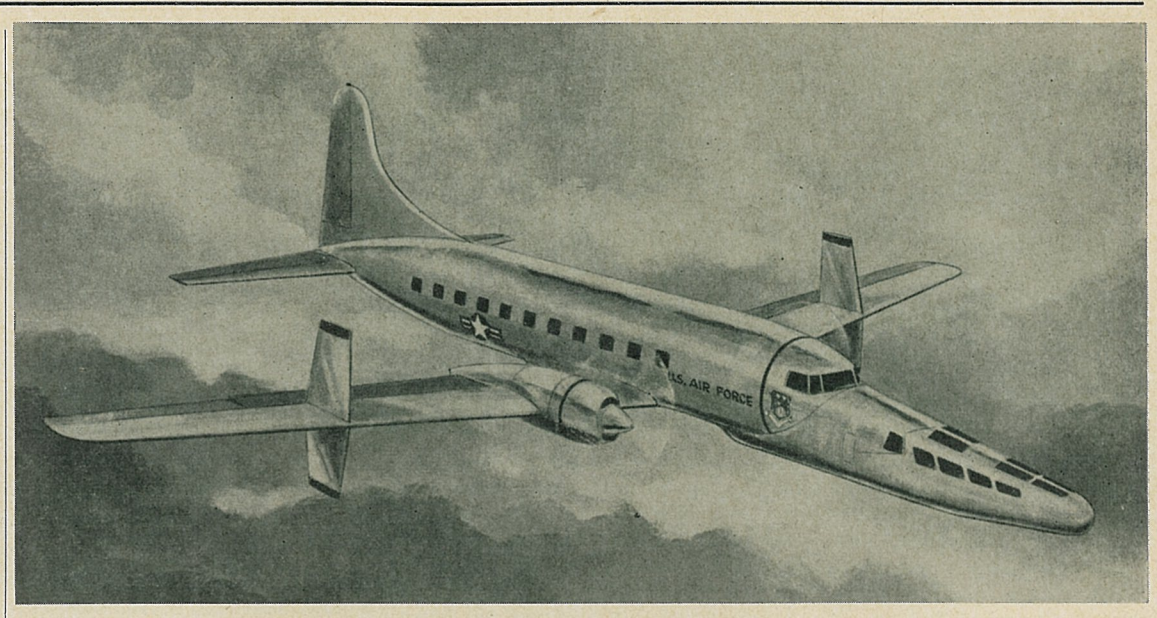
Geis swapped tales with many old buddies in his outfit — all enlisted men. All the other officers perished in battle.

"During those last days," he recalls, "we were out of everything — food, gasoline, ammunition."

Geis spent the next four years as a prisoner of war in five different prison camps.

In one camp, he used his knowledge as an electrical engineer to help improvise a water and electrical system.

"It helped tremendously in cutting down fatalities, since contaminated water had been one of our major problems," he said.



FLYING SIMULATOR—Air Force Convair C-131B will be modified by Cornell Aeronautical Laboratory, Buffalo, N. Y., as research aircraft. Second cockpit in elongated nose will be instrumented to duplicate for pilot training in-flight behavior of advanced aircraft such as Supersonic Transport and C-5A. Simulator will be built under AF contract.

Vultee Club Slates 25th Anniversary

Vultee Club members will hold their 25th anniversary reunion in October in the new Municipal Golf Course clubhouse in Downey, Calif. A visit to the old Vultee plant is planned.

Vultee Club is made up of people who worked at the former Vultee Field Division, which became part of Consolidated with the 1943 merger. Some 600 are eligible.

Details can be obtained by calling Wes Magnuson, ext. 2501 KM, or Pete Nagy, ext. 1115 LF.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Modern TV Classroom Complex Planned at Fort Worth Division

A virtual graduate-school engineering program will be offered through in-plant television starting this fall at Fort Worth division.

About 30 engineering courses will be telecast into the plant from Southern Methodist University; in addition, several graduate courses in math and physics will be offered by Texas Christian University.

Temporarily, the courses will be held in educational services classrooms 115, 119 and 120.

Before the end of the year, however, courses will be tubed into a new, ultra-modern classroom complex near the east entrance of the new engineering and administration building.

The proposed new complex will consist of seven rooms — six of which will be furnished immediately — plus a control room. Initially, there will be accommodations for 62 students, with each room arranged to house from six to 18 people.

"We decided to make the classrooms relatively small so that instruction can be offered on a more personalized basis," said Ralph Darling of engineering management systems. Darling was responsible for overall design and implementation of the facility for educational services.

Darling said a variety of room sizes will be available to permit efficient use of classroom space.

"Walls, ceiling, carpeted floors and furnishings will be designed to afford maximum acoustical efficiency," he said.

Special form-fitting chairs will be attached to pedestal-mounted, formica-surfaced lecture tables facing a 23-inch television monitor in front of the room. A rack is provided for students' coats and personal belongings.

A "talk-back" mike will be placed between every two seats. The student simply presses a push-to-talk button if he wishes to ask the lecturer a question.

Students taking the course in other classrooms, as well as the lecturer, will be able to hear and to participate in discussions.

"Eventually," Darling said, "we'll install a signal system. In this setup, a light alerts the professor when a student lifts the mike from its cradle. The professor may acknowledge students as he desires."

An attendant in the complex's control room will monitor classes and television reception. He'll also service "pigeon holes" through which students turn in their homework and receive it back from the school.

By means of an electronic switching system, the attendant will be able to feed any incoming channel of information into any classroom.

Courses will be televised this fall from two classroom studios at SMU and another at TCU.

"During the first semester of operation, we'll be limited to two incoming channels, forcing us to select courses offered by the two schools," Darling said. "By year's end, however, we'll add equipment for a third channel."

Courses will be offered from 8 a.m. through 9:20 p.m. Monday through Friday.

"An engineer must make special arrangements with his supervisor if he wishes to take a course during regular working hours," Darling said. "He must also arrange for making up time away from work."

The division's Tuition Refund Plan will apply to credit courses. Limited accommodations will exist for personnel who wish to audit courses; however, the $50 audit fee is not refundable.

Graduate degrees in electrical, mechanical, civil, and systems engineering (formerly IE) and engineering administration will be available through SMU. Advanced degrees in math and physics are to be available from TCU.

"In the future, we expect the program to expand as more institutions build studios and beam courses over the network," Darling said.

PRETTY MODEL—Model of new classroom complex for television courses to be offered this fall at Fort Worth division is displayed by Bobbie Austin. Ultra-modern rooms will include "talk-back" mikes.

Boron Fiber Aluminum To Be Used in Space Hardware Research

Convair will build a large piece of aerospace hardware from boron fiber aluminum fabricated by processes developed within the division under an Air Force contract awarded for application of metal matrix composites to aerospace structures.

The division will be one of the forerunners in determining applicability of metal matrix composites — material formed by embedding hair-like fibers in metal — under a contract of approximately $700,000 from the Air Force Materials Laboratory, Wright-Patterson AFB, Ohio. Capt. W. J. Schulz is project engineer for the Air Force.

Under the contract, Convair will develop processes for fabricating composite material of aluminum and boron fibers and construct a demonstration test item of aerospace hardware, in this case, a PRIME payload adapter, to prove the material's applicability.

Fort Worth division has been involved for some time in development and testing of boron-epoxy composite, using plastic material for the base, or matrix.

Research to date has shown that composite materials may be over three times stronger and have at least three times higher stiffness than unreinforced metals. As a result, structures of composite materials may be 40 to 60 per cent lighter than the same structures constructed of conventional materials.

Combined, these properties make composite materials ideal for aerospace vehicles or spacecraft boosters — wherever high structural efficiency is vital and use of the new type of materials can be economically justified, explained W. H. Schaefer, program manager of Convair's composite materials project. The project has been established as a separate entity reporting directly to W. W. Fox, director of product design.

J. L. Christian, as deputy program manager, heads a team of engineering and research specialists drawn from other functions to direct their efforts to the program during the 18 months of the current contract.

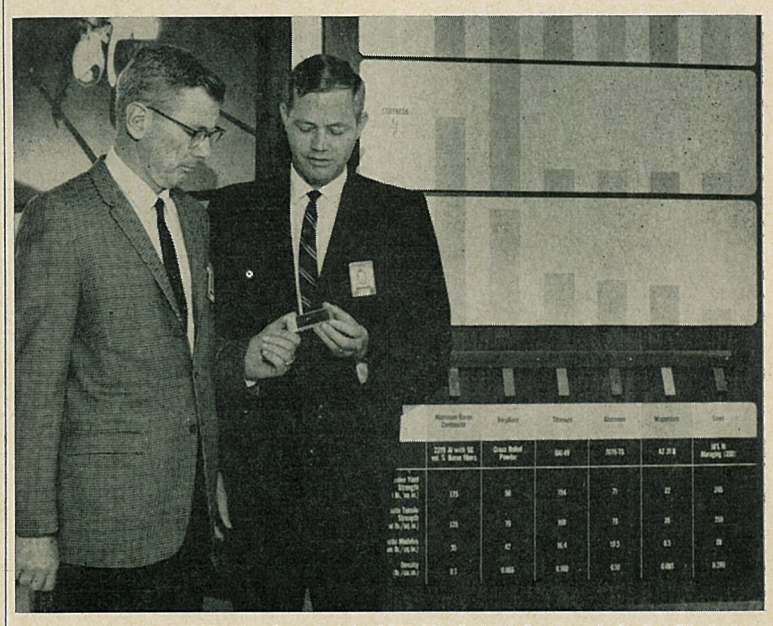
After performing detailed design studies and developing improved processing techniques and specifications, Convair team members will evaluate mechanical and physical properties and do fabrication development studies for optimum means of forming, machining, welding, and riveting of the aluminum-boron composite materials.

"In other words, we are responsible for determining those properties which must be known in order to use the aluminum-boron composite material in a structure," Christian said.

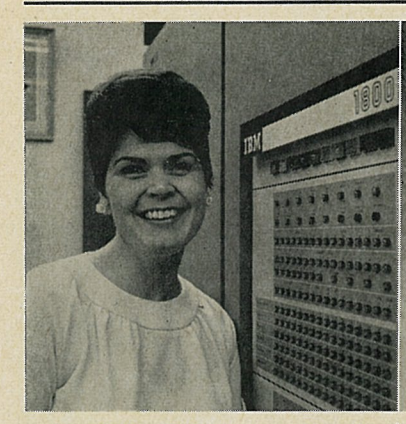
Associated with Convair in the program are Harvey Aluminum Co. of Torrance, Calif., and the Illinois Institute of Technology's Research Institute, Chicago, Ill. Harvey Aluminum, who for more than three years has developed filament reinforced metal matrix composites under company and government agency sponsorship, will make the material to Convair specifications. ITT Research Institute will do micromechanics studies and consult on test specimen design and test procedures.

Research will culminate in production of a PRIME adapter, a stiffened shell structure originally designed for use in the launch of maneuverable re-entry vehicles.

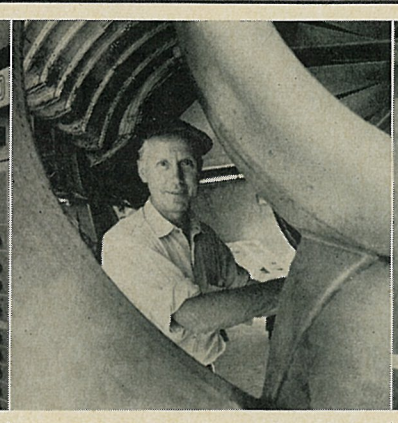
"This component was selected because it is a 'basic shape' structure, or recurrent configuration, and, as such, knowledge derived from its development will have widespread applicability," the Convair team proposal points out.



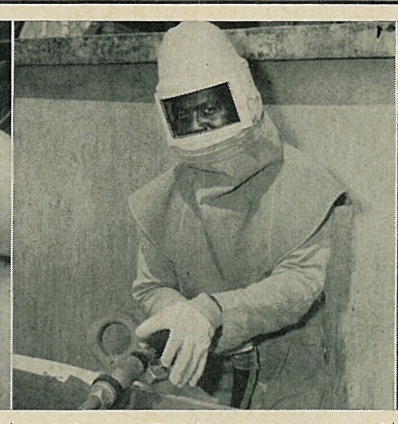
MATERIAL STUDY—Convair's W. H. Schaefer and J. L. Christian examine specimen of aluminum-boron composite, new metal matrix material for which Convair is developing fabrication processes under Air Force contract. Display in background was prepared by Convair for Corporate-wide Navy Technology Review at Quincy division.



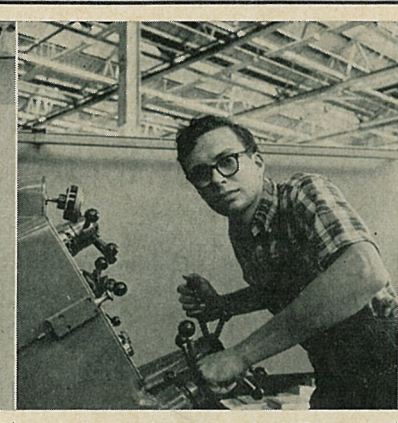
Harriett Fisher, engineering assistant at the Convair high speed wind tunnel, Harbor Drive facility, has operated the IBM 1800 computer since it was installed there four years ago. She joined Convair 12 years ago as as engineering aide in the stress analysis group and transferred to the high speed wind tunnel seven years ago. A native of North Carolina, Harriett came to San Diego in 1951. She now makes her home in La Mesa and, although not claiming any specific hobbies, admits to liking almost everything, especially attending the theater.



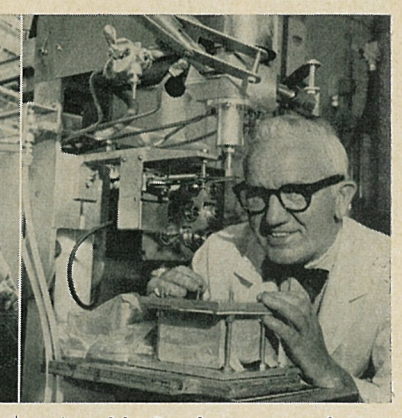
A field and service mechanic in the Convair Service Center, Leo Buczynski has worked on every Convair aircraft from the BT-13 trainer to the 990 jet transport. He joined field operations at Vultee Field in 1940, transferred to San Diego in 1944, and to the Service Center a year ago. He was crew chief on the NASA 990 during the solar eclipse chase in 1965. He and wife Helen keep busy with their avocado grove in Spring Valley and are now starting a macadamia nut orchard. They have four sons, two in the Air Force.



John A. Fielder, a veteran of 14 years with Convair, is one of a half-dozen painters in Dept. 250-1 at Kearny Mesa who alternate in taking six-week shifts as a sandblaster to remove rust from surfaces to be cleaned and painted. He was snapped using high pressure stream of crystal white sand to clean a molten-metal ladle. The helmet used has its own air supply. Fielder lives in Skyline Hills with his wife, Loraine, and five children. They grow peaches, apricots, oranges, and tangerines in a small grove in their back yard.



A second generation Convairite, Mike Seybold decided to work with machinery when he graduated from Point Loma High in 1964. He worked awhile as a mechanic at McCune Motors before joining Convair's training program as a milling machine operator a year ago. He is now one of the operators of the new Marwin routers going into Plant 19 for work on F-111 parts. Mike drag races at Carlsbad, driving his 1964 Plymouth superstock car. In the winter he and his father, Charles, Convair tool analyst, enjoy deer hunting in Utah and duck hunting.



Arnold Ramberg, an instrumentation laboratory technician, bolts supression plate to OGO-F satellite electronics package after inserting liquids from new polyurethane foam dispensing machine in Dept. 551-4's plastics lab in Bldg. 33 at Kearny Mesa. Two liquids, proportionately mixed in head of machine, expand more than 30 times into foam in 30 seconds. "Flight articles" are cured 72 hours in oven for dimensional stability after suppression plate is removed. Ramberg has worked in plastics lab 11½ years. He enjoys photography and fishing.

JANITOR "SCHOOL"—Lower photo shows janitors assigned to Convair's Lindbergh Field plant and AF Plant 19 at presentation of certificates following completion of training course. Standing in background are C. D. Saxon and James McMinn, janitorial assistant foremen. In upper photo, W. J. Stanley, manager of plant engineering (right), and Vern Sharp, general foreman maintenance (left), congratulate Gertrude Kimble, Claretha Blakely, and Alma Marshall.

Two Score LF and Pl.19 Janitors Graduate in Training Program

Forty Convair janitorial employes at Lindbergh Field and Air Force Plant 19 have been awarded certificates of recognition on completion of an intensive two-week custodial training program.

(Similar certificates were awarded in May to 46 employes who had completed training at Kearny Mesa.)

W. J. Stanley, manager of plant engineering, "kicked off" the training program at Lindbergh Field June 14 and spoke at graduation ceremonies June 28. The certificates were presented by Vern Sharp, general foreman.

The employes were divided into two groups for eight-hour instruction and practice sessions June 17 and 24 under the direction of assistant foremen C. D. Saxon and James McMinn.

Representatives from commercial janitorial supply and wax manufacturing firms presented films and demonstrations June 21 and 23.

Stanley said the training covered latest techniques in both floor care and general cleaning. Procedures have been standardized for each of the plants and the division has purchased 18 new floor polishing machines at a cost of $11,000.

"We are gratified with the results being achieved," he said. "Cooperation from personnel in departments throughout the division in helping us keep the plant clean also has improved considerably."

Stanley pointed out that employes spend more waking hours in the plant than at home. "We should be just as concerned about cleanliness in our work areas as we are about cleanliness at home," he said.

New janitorial employes will be given instruction and will work with experienced janitors until they are thoroughly familiar with proper cleaning and waxing techniques.

Whispering Palms Chosen For Golf

Next month's CRA golf tournament has been scheduled Aug. 19 and 20 on the Whispering Palms course near Del Mar.

Employes may sign for starting times tomorrow through Aug. 11 by calling ext. 1111 KM.

Horsemen Enjoy Cuyamaca Weekend

A crowd of 78 members and friends of the CRA Riding Club traveled to Horseman's Group Camp in Cuyamaca State Park for a weekend of trail rides and camping, July 14-16.

Shirley Berry, wife of Commissioner Steve Berry, was trip chairman.

Chuck Payne barbecued hams for the Saturday night dinner arranged by a committee of Adelaine Donahoo, Mrs. Ken Smith and Mrs. Sam Special. Floyd Branscom emceed a musical program.

Twenty riders explored trails in the area every day of the campout.

Next social event of the Convair group will be a family beach party on Mission Bay, near Vacation Village, Saturday, Aug. 5, at 6 p.m.

Regular meeting will be Aug. 9, 7:30 p.m., in CRA Clubhouse.

Six-Day Back-Pack In Sierra Slated

CRA Adventurers have scheduled a six-day vacation back-pack hike Aug. 21-26 north of Tuolumme Meadows in the High Sierrra, where elevations range frorm 8,000 to 11,000 feet.

Hikers will begin the trek at Virginia Lakes near Bridgeport, and come out six days later at the north edge of Tuolumme Meadows where a car shuttle will return them to their own vehicles.

Employes and family members wishing to make the trip have been asked to call Joe Quijada, ext. 2746 KM or (home) 284-0883.

Dick Bowen, commissioner, said most of the group will leave San Diego after work Aug. 18 or early Aug. 19.

TROPICAL FISH DISPLAY WINS

Saul M. Rodriquez, a reliability engineer in Convair's Dept. 958-7 and senior member of the CRA Tropical Fish Club, won a trophy and ribbon for "best in class" tropical fish display at the recent Southern California Exposition and San Diego County Fair.

Salvage Schedule

Next employes' sales day at the Lindbergh Field salvage yard, adjacent to Gate 5, is Aug. 19.

GIFT TO MISSION—Convair wife, Vera Whitbey, presents electric stove she won in pie-baking contest to Arnold H. Thiessen for City Rescue Mission.

Convair Wife's Prize at Fair Donated to Rescue Mission

The City Rescue Mission has a new stove—thanks to the prize pie of Vera Whitbey, Convair wife.

Mrs. Whitbey, whose husband, I. E. Whitbey, is in Dept. 049 at Lindbergh Field, won the electric stove as first prize in the cream pie bake-off at the San Diego County Fair this month.

She decided, since she already had a perfectly good range, to donate the stove to a worthy cause in the name of the Convair Wives Club of which she is a member.

The needs of the City Rescue Mission were brought to her attention by Con-Trib-Club. The Mission provides emergency aid to hundreds of homeless and jobless people each year. It feeds some 170 a day.

Arnold H. Thiessen, executive director of the Mission, said that the stove will be installed in the organization's Family Shelter on 14th & J Sts where mothers and children are housed and fed.

Joe Olander Finishes Grueling Bike Tour

CRA Bicycle Club members were among 115 West Coast cyclists who took part in a grueling 200-mile annual "grand tour" July 8 in Ventura County.

Joe Olander, vice president of the club, finished the circuit "well up in the pack" in 15 hours — an average of 13½ miles an hour.

ROCKHOUNDS SLATE ANNUAL PICNIC

Convair Rockhounds and their families will gather at the CRA Missile Park, Kearny Mesa, for their annual picnic this Sunday, July 30. Everyone is welcome to the all-day affair, 11 a.m. to 6 p.m. Each family will provide its favorite dish for the potluck and furnish its own silverware. No club meetings will be scheduled until the second Wednesday in September.

Mexico Travelers Will Leave Aug. 12

A few last-minute reservations for the annual General Dynamics summer tour to Mexico will be accepted if prospective tourists will sign immediately.

Jim Hardison, tour conductor, said that signups and information can be made by calling his home phone, 276-5805.

Tour dates are from Aug. 12 through Aug. 24.

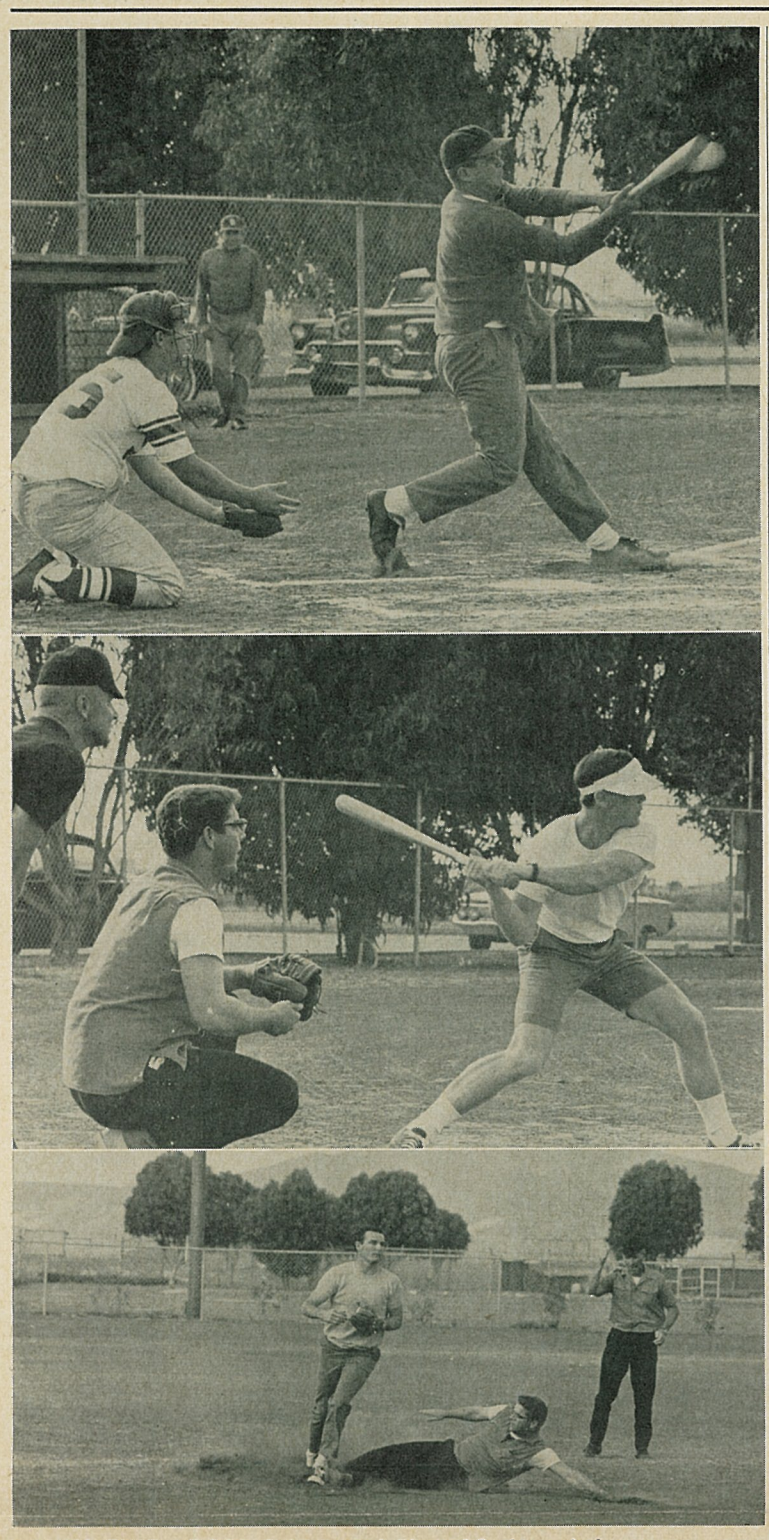
Transportation is by air-conditioned Pullman car from Mexicali to Guadalajara, Mexico City, and by bus to Taxco and Acapulco and back to Mexico City for the return trip.

Price is $385 each for transportation, de luxe hotel accommodations, most meals, and sightseeing.

HELEN PEMBERTON NEW CRA SECRETARY

Helen Pemberton of General Dynamics NEWS was elected secretary of the Convair Recreation Association at the July 10 meeting to fill out the term of Evelyne Thrall who has resigned. Mrs. Thrall will leave the Company the end of this month. She had served as CRA secretary for five years and was elected to her sixth term this spring.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.



BALL TIME—F-111 Pylons and Plant 19 slow-pitch teams square off in second-half play of CRA season at Kearny Mesa field. In top shot, Bob Guerra of Pylons knocks one out with Bob Wolf, Plant 19 catcher, behind plate. Gil Chavez, Pylons manager-captain, is in background. In center photo, Tony Condon, Plant 19, is at bat. John Rich, Pylons catcher, hopes for foul. At far left is Umpire Whitey James. In lower photo, Harry Van Buren, base umpire, signals Rich out at second. Jim Clayton is Plant 19 second baseman. Pylons snowed Plant 19 with a 30 to 6 score.

It's Sign-up Time Again For Winter Keg Loops

It's that time again! Winter bowling leagues now are being formed for the beginning of CRA tourney play the week of Sept. 11.

Keglers are urged to sign before the middle of August for their league preference. Organization meetings will be held the last week in August and the first week in September. Meetings will be held at each location at 7 p.m. on the night of scheduled bowling.

League schedule:

Parkway Bowl — Monday, 810 Men's Scratch. Tuesday, Mixed 640 Foursome.

El Cajon Bowl — Monday, 810 Men's Scratch. Thursday, Mixed 640 Foursome.

Clairemont Bowl—Monday, 810 Scratch. Tuesday, Mixed 640 Foursome. Friday, Mixed 640 Foursome.

Victory Lanes — Thursday, Mixed League.

Pacific Recreation — Friday, Women's Trio or Foursome, and Men's 850 Scratch.

Frontier Lanes — Wednesday, DCAS and Convair Mixed League. Thursday, Electronics and Convair Mixed League.

Starting times will be 6:30 p.m. at all bowling alleys.

For further information call CRA Commissioners Forest Erwin, ext. 2884 KM; Mike Brooks, ext. 1985 LF; or Jim Hayman, ext. 605 LF.

Late Reservations OK For Ball Trip

Last-minute reservations will be accepted through tomorrow (Thursday) for this Sunday's (July 30) baseball trip to the Phillies vs. Dodgers game in Los Angeles.

Tickets may be purchased at CRA Clubhouse at Kearny Mesa and Lindbergh Field employe services, Bldg. 16.

Cost of round-trip transportation and game admission is $5. Buses will leave Kearny Mesa and Bldg. 19, Lindbergh Field, parking lots at 9:30 a.m.

Bargain Tickets

(Following are bargain-rate tickets currently available to employes. Unless otherwise stated, they are offered at employe services offices of Convair, Stromberg-Carlson, Electronics-SD, H. C. Medearis' office at AF Plant 19, and CRA Clubhouse.)

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Season tickets for San Diego Chargers home football games are available for General Dynamics employes and family members. Details may be obtained by calling CRA, ext. 1111 KM.

Tickets for the 6 p.m. Aug. 20 performance of Ringling Brothers and Barnum and Bailey Circus at San Diego International Sports Arena are on sale at $2 and $3 (a $1 savings) at all employe services outlets. Deadline is Aug. 17.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Aug. 1. Call ext. 1071 LF or 3322 KM.)

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ADVENTURERS — Six day back-pack trip in High Sierra Aug. 21-26. Call Joe Quijada, ext. 2746 KM.

ARCHERY — Awards presentation Friday, Aug. 4, 7:30 p.m., CRA Clubhouse. Next club shoot Aug. 6, 1 p.m., CRA range, Kearny Mesa.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BONAIR FLYERS — Meeting Tuesday, Aug. 1, 7:30 p.m., CRA Clubhouse.

BOWLING — Winter leagues forming now. Call ext. 1111 KM.

BRIDGE — Play each Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS — Play Wednesdays, 7:30 p.m., CRA Clubhouse.

FENCING — Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB — Annual Summer Flower Show, July 30, Floral Association Bldg., Balboa Park. Public admitted free 1-6 p.m.

GOLF — Sign up through Aug. 11 for Aug. 19-20 CRA tourney at Whispering Palms. Call ext. 1111 KM.

HI-FI/MUSIC — Demonstration of home-built stereo amplifier at Aug. 8 meeting, 7:30 p.m., CRA Clubhouse.

ICE SKATING — Skating for GD families Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

RADIO CLUB — Meeting Aug. 3, 7:30 p.m., CRA Clubhouse.

RIDING CLUB—Family beach party Aug. 5, 6 p.m., Mission Bay. Meeting Aug. 9, 7:30 p.m., CRA Clubhouse.

RIFLE CLUB — Junior shoot Aug. 5, 8 a.m.; senior shoot, tonight, July 26, 7 p.m., Gillespie Field Range.

ROCKHOUNDS—Annual family picnic July 30, 11 a.m.-6 p.m., CRA Missile Park, Kearny Mesa. No meeting in August.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB — Meeting Aug. 1, 8 p.m., Catamaran Hotel, Mission Beach Blvd.

SOFTBALL — Plant league slow-pitch play Tuesday and Wednesday evenings; fast-pitch, Monday evenings and Saturday mornings, Kearny Mesa field.

SPORTS CAR CLUB — Meeting Aug. 9, 7:30 p.m., Convair executive dining room, LF.

SQUARE DANCING — Dynamic Eights dance Thursdays, 8-10 p.m., CRA Clubhouse.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:15 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Mondays, 7:30 p.m., CRA Clubhouse.

TRAILERS — Road Runners meet July 27, 7:30 p.m., Gillespie Field Clubhouse. Travelers meet Aug. 1, 7:30 p.m., CRA Clubhouse.

WATER SKIING—Skiing after work Thursday afternoons, 5:30 p.m.; Saturday and Sunday mornings, 9 a.m., Crown Point.

Women's Golf Won By Freda Magargal

Freda Magargal and Dorothy Johnston were trophy winners at the GD Women's Golf Club tourney July 8 at River Valley. Freda held low score for Flight A and Dorothy for Flight B.

Runners-up in Flight A play were Mabel Dunn, Marilynn Hersey, Jean Hawthorne, and Vi Hurst. Flight B runners-up were Vi Gilbert, Jo Ann Kranz, Evelyn McFall, Rosalind Fisher. All received gift certificates.

Next tournament will be Aug. 12 over Cottonwood's nine-hole course. First tee off will be at 8 a.m.

OLD AND NEW—Fran and Harry Rush, far left in front row, head new officers of CRA square dancers. Outgoing officers are at right in photo taken at potluck in honor of newly-elected slate July 13.

Dynamic Eights Dancing Club Installs Fran and Harry Rush

Fran and Harry Rush take over president's duties of Dynamic Eights, CRA square dance club, following installation of officers July 13.

Other new officers are Pat and Dick Vaught, secretary; Ruth and Ezra Lancaster, treasurer; Gene and Roland Hagar, senior association representatives; Virginia and Bob Bowman, social chairmen; Doris and Skee Salefski, decorations chairmen; Dot and Mark Markham, sheriff; Pearl Garrison and Jim Allen, publicity.

Both new and outgoing board members were honored at the July 13 potluck dinner and dance in CRA Clubhouse.

Dynamic Eights dance each Thursday evening, 8 to 10 p.m., in the clubhouse at the Kearny Mesa plant. All intermediate dancers are invited to attend. A new beginners class will start in September.

For information call Roland Hagar, ext. 1954 KM; Pearl Garrison, ext. 1141 LF; or Lee Lemen, ext. 556, General Atomic.

Gardeners Grooming Entries For Show

Convair dahlia growers will enter their prized blooms in 49 classes at the annual Summer Show sponsored by CRA Garden Club this coming Sunday, July 30.

Altogether, 79 classes of dahlias, citrus and deciduous fruits, vegetables, arrangements, corsages, children's entries will be open for exhibitors in the Floral Association Bldg., Balboa Park.

Entries will be accepted the evening of July 29 from 7 to 9 p.m. and from 7 to 11 a.m. on Sunday. Doors will close for judging at 11.

The public will be admitted without charge during the afternoon hours, from 1 to 6 p.m.

Home-Built Stereo Unit To Be Shown

A 140-watt, home-built stereo amplifier will be discussed and demonstrated by J. D. Martin at the CRA Hi-Fi Club meeting at 7:30 p.m. Aug. 8 in CRA Clubhouse. The unit gives high performance at low cost.

There will be an election for offices of vice president and secretary with nominations from the floor. A valuable door prize will be awarded.

No. 1 Team Again Wins IRC Shoot

Convair's No. 1 rifle team won the perpetual trophy for performance in the annual Industrial Recreation Council rifle shoot for the 11th time in 14 years, CRA Commissioner Dick Zeich reported after the June 11 event.

The No. 2 team fielded by Convair took second spot and the NEL team, third.

Zeich was high gun for the day with a score of 332, barely nosing out Convair's Dave Farrelly by two points. Others from Convair winning individual plaques were Trudy Kourbelas and Bob Kastilahn.

Zeich went on to top the CRA group's senior club championship shoot July 1. His score in offhand position broke the tie with Dick Greer for overall high spot in the four-position match. Both finished with 315s and 3Xs.

Trudy Kourbelas was high woman.

Greer has firsts for sitting and kneeling, and second for prone position. Zeich scored firsts in prone and offhand, second in sitting. Nick Kourbelas was second in kneeling and offhand.

Senior shoots are held regularly second and fourth Wednesdays at 7 p.m. Time of junior shoots has been changed to 8 a.m. on the first and third Saturdays during warm weather.

TROPHY WINNER—Iris Oster, left, will have her name engraved on Ernie Paul Memorial Trophy as low scorer in annual tournament. Presenting trophy at June 10 event is Doris Parker, outgoing club president.

FOR SERVICE—Convair Management Club presented desk sets to, from left, Howard Hill, G. O. Withem, P. E. Gelles, R. M. Mitchell for outstanding service to club during past year at July 14 Awards Night.

Convair Mgt. Club Awards Night Recognizes Past Year Efforts

Convair Management Club said "thank you" to members who had contributed their time and efforts to club activities during the past year at an Awards Night July 14 held at Cafe del Rey Moro in Balboa Park.

Larry Sweeney, 1966-67 club president, handed certificates of appreciation to his officers, board of control members, special awards to a group of non-members including several girls who had helped with raffle ticket sales.

Honored for outstanding service during the club term were P. E. Gelles, Howard Hill, R. M. Mitchell, and G. O. Withem. Gelles (144-2) was in charge of membership; Hill (961-0), award presentations; Mitchell, area council and clinics; Withem, Explorer Scouts and Junior Achievement. They each received desk calendar and pen sets.

Some other 40 committee chairmen and members who had organized and worked on special events received desk pen sets or certificates from Bob King, 1965-66 club president.

Adopted Children Service Offered

General Dynamics families interested in adopting children are urged to contact the Adoption Services of San Diego County.

The agency is seeking homes for children of minority racial backgrounds where the child will not necessarily match physical characteristics exactly.

Entire adoptive process from inquiry to placement takes from three to five months.

Call 234-3281 for information.

WEIGHT ENGINEERS SCHEDULE PICNIC

Members of the San Diego chapter of the Society of Aeronautical Weight Engineers (SAWE) and guests will attend a picnic July 30 on Crown Point at Mission Bay. Lunch is scheduled for 1 p.m. Details can be obtained from Jeweline Richardson, ext. 2296 KM.

MAILROOM TICKET SALES DROPPED

Sale of discount tickets and other items offered through CRA has been discontinued at the Lindbergh Field engineering mailroom, Bldg. 51. All such sales are handled only at employe services in Lindbergh Field Bldg. 16.

If one copy is sufficient, why order more?

F-106s of 71st FIS Undergo Modification For Aerial Refueling

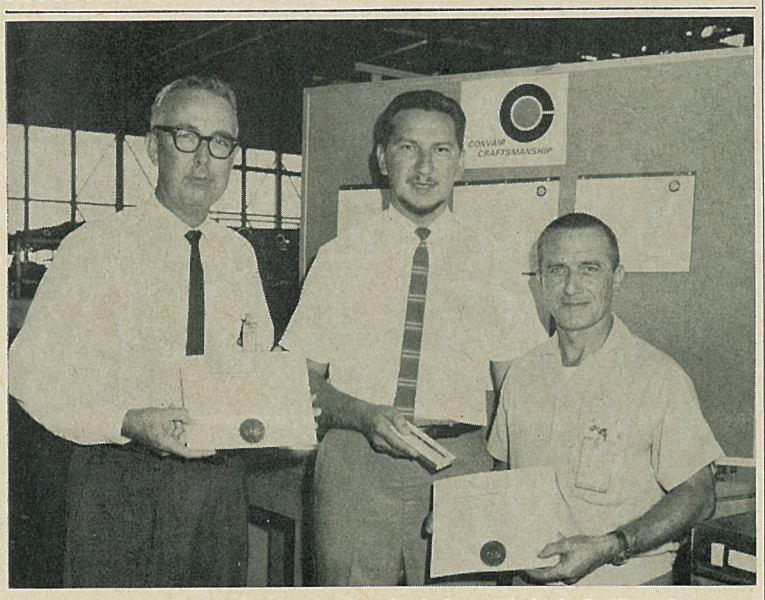
First Air Force squadron of F-106 interceptors to be modified for aerial refueling is the 71st Fighter-Interceptor Squadron at Richards-Gebaur AFB, Kansas City, Mo.

According to a recent issue of the base publication, the modification program under way at Richards-Gebaur is being accomplished through the cooperation of some 50 civilians from Sacramento Air Materiel Area with support of personnel from the 328th Fighter Wing.

D. F. Houtz, field service representative, is assigned in support of the modification by Convair.

Quoting from the Richards-Gebaur news report, a single aircraft requires over 1,000 manhours for modification.

Convair developed the air-to-air receptacle and is now fabricating the modification kits for Air Force F-106s under a contract from San Antonio Air Materiel Area, Kelly AFB, Texas.



EASTERN AWARDS—J. A. Smith, left, and J. J. Paille, right, recently received award checks, commendation certificates and bonus-award ball-point pens from F. M. Waitkus, Convair material control supervisor at Eastern Test Range, for Employe Suggestions that will save division more than $4,200. Smith received $182.30 award and Paille $238.30.

New SLV-3A Set For Inspection By Customer

"First article configuration inspection" (FACI) for Convair's new SLV-3A booster will be held tomorrow and Friday (July 27 and 28) at the Kearny Mesa plant.

Joseph W. Coddou, Convair production program manager, said about 100 representatives from the Air Force, Defense Contract Administration Services, Aerospace Corp., NASA and Convair will participate in the inspection which will include a review of 307 engineering "packages."

Maj. John Pruitt of Air Force Space and Missile Systems Organization headquarters will be FACI chairman.

The SLV-3A is 117 inches longer than the SLV-3 and will carry an additional 48,000 pounds of usable propellants. It is designed for use with the Agena and other second-stage vehicles. With the Agena, it will be capable of sending a 1,450-pound payload to escape velocity and a 980-pound payload to Mars.

Atlas 5602A, the first of the SLV-3A design, will serve as booster for NASA's Orbiting Geophysical Observatory-E mission early in 1968. Delivery of the vehicle to the Air Force is scheduled for October.

Lunar Orbiter Launch Nears

Convair's Atlas SLV-3 No. 5805 stands ready at Complex 13 at the Eastern Test Range to start Lunar Orbiter 5 on its way to the moon next week.

Orbiter 5 is to photograph wide areas of the lunar surface as it orbits the moon every 12 hours from near lunar polar orbit with an apolune of 6,300 kilometers and a perilune of 2,500 kilometers.

The spacecraft will be sent on its quarter-million-mile trip by an Agena D second stage vehicle after it has been lifted into space by the Atlas booster.

The launch is the last currently scheduled in the Lunar Orbiter series. It also will be the last for William Phillipp as launch conductor before he reports to Kearny Mesa for a new assignment.

Jim Von der Wische, Convair program manager for NASA SLV-3 programs, and an 11-man Convair team were at ETR July 10 through 14 for an equipment assessment and flight readiness review.

James Ball was team captain.

Others and areas of responsibility were John Wickham, reliability; LeRoy White, propellant loading; George Clapp, hydraulics; Francis Cook, telemetry, instrumentation and range safety; George Jerahian, structures; Haydon LaNois, pneumatics; Lee Lisak, electrical systems; Harlow Minch, flight control; Jack Taylor, quality assurance, and Gene Anspach, engine systems.

Lunar Orbiter 4, launched May 4 by Atlas SLV-3 No. 5804, has returned detailed photos of 99 per cent of the front face of the moon and high-altitude photos of 75 per cent of its back side. It will continue to relay scientific information on its orbital environment for several months.

Star II Will Spend Summer in Gulf

Star II, Electric Boat division research submarine, is conducting research operations in the Gulf of Mexico. The sub made the trip from Groton, Conn. aboard its support ship, Gemini, which will operate out of Morgan City, La.

The two-man sub, capable of diving to 1,200 feet, recently completed geological and biological missions in Lake Michigan for the University of Michigan.

Convair's Performance On PRIME 'Superb,' Says Program Director

Col. C. L. Scoville, director of the START program for the Air Force Space and Missile Systems Organization, has commended Convair division for "superb performance" in the PRIME project.

Atlas SLV-3 boosters were used to lift three PRIME (precision recovery including maneuvering entry) SV-5D wingless, lifting-body vehicles into space for re-entry flights down the Western Test Range.

Col. Scoville, in a letter to Grant L. Hansen, vice president and program director-launch vehicle programs, said his views on outstanding performance of everyone associated with PRIME were shared by many of the top people in the Department of Defense.

"Of course, the reasons for the outstanding performance on the program are very clear; namely, we had outstanding people from each organization, we defined our job clearly, and we all worked together effectively to get the job done," he said.

"In this regard the performance by you and all of your people was outstanding," he said. Special attention was called to the performance of Howard Bonesteel, James Minos and H. L. Obertries of the Convair PRIME program office; Richard W. Keehn, Atlas SLV program office manager, and Andrew Kalitinsky, director-launch vehicle programs engineering.

Col. Scoville, who is being assigned to a new duty station in Washington, D. C., said he looks forward to working with Convair on additional contracts in the future.

"Please extend my personal thanks and congratulations to all the people at Convair who contributed so magnificently to our success on PRIME," he said.

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'Impressive Reliability Record' Of Launch Vehicles Lauded

Brig. Gen. John L. Martin, director of special projects for U.S. Air Force, has expressed appreciation to Convair for its part in the classified 206 program recently completed.

"The launch vehicles supplied to this program by your company established an impressive record of reliable performance," he said in a letter to Grant L. Hansen, vice president and program director-launch vehicle programs.

"In addition, the support provided by your personnel consistently reflected the highest standards of professional competence. Please convey my personal appreciation to your fine team for their splendid accomplishments."

General Martin also commended the division's launch base operations group at Vandenberg AFB for their testing, preparation and launch of Atlas vehicles in the program in a letter to D. L. Fagan, Convair's Western Test Range operations manager.

"I am proud to be associated with such a team," he said. "You have made a great contribution to the development of satellite technology. Thank you for a job well done."

Charlie Bossart, Key Developer Of Atlas Missile, Will Retire

K. J. "Charlie" Bossart, Convair technical director, who played a major role in development of the Atlas ICBM, has announced plans for retirement from the Company the end of this month.

Bossart has been associated with Atlas and its predecessor, the MX-774 research rocket, since Convair entered the missile field in 1946. He was chief structural engineer at the former Vultee Field division when Convair received an Air Force contract for study and development of a 5,000-mile missile in 1946. He was assigned to the program as project engineer and kept his team together in spite of cancellation of the Air Force contract in 1947.

K. J. Bossart

Convair received a new contract in 1951, and Bossart again headed the design team. He became chief engineer of the Atlas project in 1955 and was named technical director of the former Astronautics division in 1957.

He has received numerous awards and honors from organizations throughout the United States as well as other countries, including his native Belgium.

Friends will gather next Monday, July 31, at the Hanalei Hotel at a 6 p.m. no-host party.

Convair Men Named To District Offices

Convair men who have been elected to district and area offices for Toastmasters International include Durwood English, educational lieutenant governor; Hal Story, administrative lieutenant governor, both for Region 2, District 5. Ezra Johnson is now governor of Area 5.

Another Convair man, Cy Campbell, is one of two nominees for international director.

PERFECT RECORD—Brig. Gen. Arthur E. Exon, left, director of Defense Contract Administration Services Region, Los Angeles, congratulates Col. James R. Ourand, DCAS plant representative at Convair, for accident-free record achieved by his personnel. William Marseilles of National Safety Council, right, had presented 1966 Business and Industry Safety Award to Ourand.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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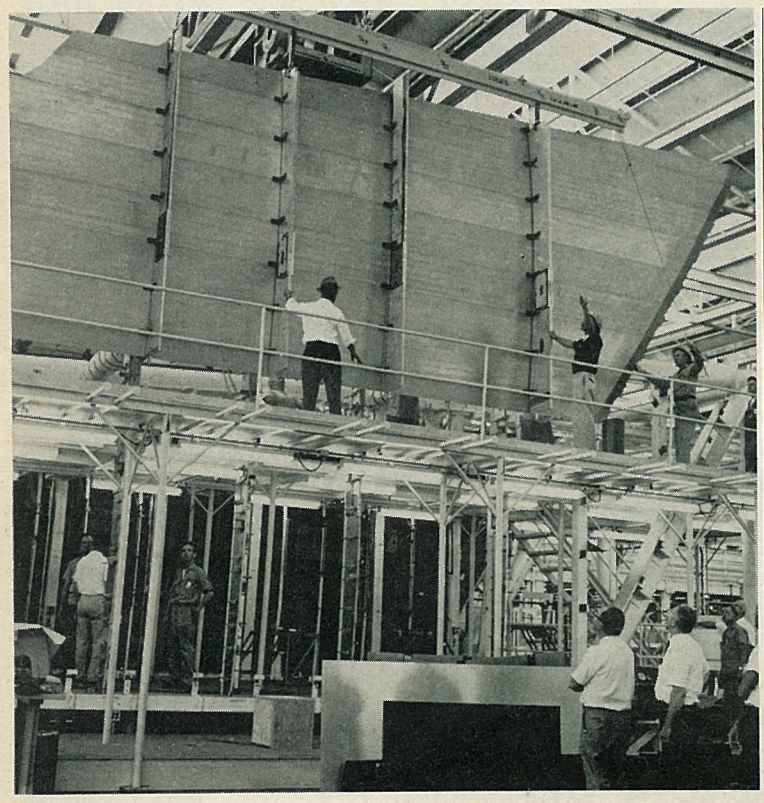


CLOSE FIT—In first move of large C-5 component for empennages under construction at Convair, righthand vertical stabilizer skin is lifted from fixture to go into clean-up area for finishing of riveting. Skin, 16-ft. wide, barely had room between fixture and roof. At right are E. D. Robinson, general foreman, and E. E. Miller, assistant foreman.

Discrepancies Nil For SLV-3A

Convair's first Atlas SLV-3A booster underwent first article configuration inspection (FACI) July 27 and 28 at Kearny Mesa with no discrepancies being logged —a new FACI record.

Maj. John Pruitt, FACI chairman for the Air Force Space and Missile Systems Organization (SAMSO), commended participants for a "job well done."

Bill Daniel, Convair SLV-3A project engineer, said FACI teams reviewed 277 of 308 engineering drawing "packages" for the new vehicle. Participating, in addition to Convair personnel, were 49 Air Force, NASA, Defense Contract Administration Services, Aerospace Corp., General Electric and Rocketdyne representatives.

Pruitt also complimented personnel who had assisted with earlier Phase I and II vehicle verification inspections. "The success of this FACI was a direct outcome of that activity," he said.

Joseph W. Coddou, Convair production program manager, presented an "official record certificate" to Pruitt at the final FACI team meeting denoting establishment of the new FACI record for lowest number of discrepancies.

The new Atlas SLV-3A, designed for use with Agena and other second-stage vehicles, is 117 inches longer than its predecessors and will carry an additional 48,000 pounds for usable propellants.

The first of the new vehicles, No. 5602A, is scheduled for use next year as booster for NASA's Orbiting Geophysical Observatory-E mission.

ENGINEERING CRAFTSMEN—R. L. Benson, Convair chief of mass properties, far right, accepts Craftsmanship Achievement banner from Paul Ferrara, director of engineering administration and services, for Dept. 588-0, first group to be rewarded under new engineering Craftsmanship program. Attending presentation were John M. Wild, director of engineering technologies, far left, and Michael Dublin, chief technical engineer.

Engineering Dept.'s First Craftsmanship Award Earned by Dept. 588-0

Convair division's research and engineering department has made its first Craftsmanship achievement banner award to mass properties Dept. 588-0.

E. R. Peterson, vice president-research and engineering, said the banner will be awarded quarterly to the group considered by research and engineering department directors to have had most significant performance toward realistic goals.

Paul D. Ferrara, director of engineering administration and services, made the first banner presentation in Peterson's behalf recently in ceremonies at Lindbergh Field. R. L. Benson, chief of mass properties, accepted the award for the winning group.

Ferrara commended Dept. 588-0 for exemplary efforts in improving customer relations through increased contacts, increasing Employe Suggestion submittals and number of technical papers published and improving internal records-keeping and manpower utilization.

Research and engineering department groups began establishing goals related to their specific tasks and activities last November.

Seventy-one groups within the department now are plotting progress on wall display charts toward more than 200 separate goals.

Included are goals related to engineering drawings and related "paper," schedules, quality trends, new business, training, cost reduction proposals and employe suggestions, budgets, work measurement, housekeeping, attendance, methods, management techniques, and conservation.

Peterson's staff members who

(Continued on Page 2)

New Shot-Peening Facility Now In Operation on Parts for C-5

Convair's new shot-peening facility recently installed at Lindbergh Field plant is now in operation on parts for C-5 empennages.

Shot-peening is an accepted industry method of controlled bombardment with round steel shot of the surfaces of finished parts to increase fatigue life and prevent stress corrosion cracking. Convair has, until now, subcontracted its shot-peening work to outside firms.

Special equipment installed in Bldg. 78, shot-peening facility, includes a shot-peening cabinet and a gantry machine, both built to Convair requirements by Metal Improvement Co.

Size of the cabinet (4x5x10-ft.) was determined by the size of the C-5 pivot fitting, largest part to be processed. Pivot fittings are swung into the cabinet by overhead crane.

Small parts are placed on a cart which moves slowly from left to right within the cabinet as eight nozzles move forward and back across the length of the enclosed area shooting millions of small shot at the parts. Size of shot used in the cabinet is .033 in diameter, that in the gantry, .023 for saturation peening and .055 for forming.

(Continued on Page 2)

Over 800 Kits Will Be Built For F-102s, F-106s

Convair division will fabricate kits for installation of a standby vertical gyro indicating system in Air Force F-102 and F-106 interceptors. The system serves as a secondary system for attitude control.

The contract from San Antonio Air Materiel Area, Kelly AFB, Texas, calls for production of 796 aircraft kits and 10 mobile training unit kits.

Fabrication will start on prototype kits this fall with first production kits scheduled in April of next year. Completion of the order is dated for the fall of 1968. The kits will be installed at Air Force bases with Convair providing technical assistance in the field.

The kits have been developed by Convair engineering under an Air Force service engineering contract.

Savings, Stock Plan 'Open' This Month

New enrollments in the General Dynamics Savings and Stock Investment Plan are being accepted this month.

Employes eligible but not members, or those establishing eligibility by having been with the Company a full year, must sign by Aug. 31 for membership to be effective for the quarter beginning Oct. 1.

Persons wishing to change investment options or percentage of savings also may make application this month.

Forms are available in employe services.

Another Atlas Flight Perfect

Perfect flight of Convair's Atlas SLV-3 No. 5805 started Lunar Orbiter 5, the last in a series, on its way to the moon Aug. 1.

The launch marked the 34th consecutive successful Atlas space booster flight. Liftoff from Complex 13 at the Eastern Test Range, delayed 2 hrs. 24 mins. by thunderstorms, was at 3:33 p.m. Pacific time.

Convair officials from San Diego on hand for the launch included Grant L. Hansen, vice president and program director-launch vehicle programs; Andrew Kalitinsky, launch vehicle programs engineering director, and Jim Von der Wische, Convair program manager for NASA SLV-3 programs. William Phillipp was launch conductor.

The Agena second stage vehicle released the 860-lb. spacecraft on its lunar trajectory with such accuracy only one mid-course correction was required.

Orientation Program Acquaints Newcomers With Products, Policy

Convair division is helping newly-hired college graduates bridge the gap between campus and industry in a new engineer orientation program held under auspices of educational services and engineering.

This year Convair has 118 June engineering graduates, recruited from 54 colleges across the country, joining the division.

Largest single class of 38 completed the 30 hours of familiarization, held over a period of two weeks at Lindbergh Field plant, on July 21. Another group of 31 at Kearny Mesa completed the program Aug. 4.

Some 40 engineering management people spoke at the meetings and at the final session a panel of division management personnel answered questions in a frank discussion of the new engineers' status and future with the Company.

"It is absolutely vital that we acquaint our newly-hired engineers with General Dynamics and Convair division," Paul Ferrara, director of engineering administration and services, said. "We can not expect them to step right in and be of any value to the division if we don't introduce them to the people they are to work with and explain policies."

During the introduction series speakers explain the Corporate and division structure, current products of the division, future products in proposal stages such as the VSX and AX advanced aircraft and the advanced ICBM. Total division management structure and the role of engineering within that structure is described.

All of the information is tied together with a series of presentations on development of a product from conception of an idea to a deliverable product.

Opportunities for self development and continued growth with the Corporation under the Management Upgrade policy were stressed.

Each group has luncheon with the division's engineering staff on the final day.

HELLO, CONVAIR—Newly-graduated engineers joining Convair fire questions at career panel of, from left, Ross Evans, manager of personnel administration; Paul Ferrara, director of engineering administration and services; F. D. Applegate, chief design engineer; and Jack Croft, chief of educational services, at concluding session of orientation.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Aug. 1 and Aug. 15.

Thirty-year: Dept. 041, J. F. Bogen; 144, V. S. Caldwell; 460, F. A. Boyle.

Twenty-five-year: Dept. 001, R. A. Dix; 002, J. P. Hood; 130, J. K. Field; 400, N. D. Tracy; 420, A. Markewich; 587, T. L. Heid; 732, W. F. Louden; 744, R. S. Flores; 756, P. W. Brock.

Twenty-year: Dept. 001, M. H. Thrasher; 002, E. S. Slovacek Jr.; 016, R. J. Ratliff; 059, A. L. Van Quill, M. R. Verduzco; 113, Elizabeth S. Mountain; 400, K. C. Cumberledge; 452, V. A. Miller; 460, L. E. Stokes; 551, J. W. Cates; 761, C. J. Schmitz; 780, Alice W. Goldman; 831, J. A. Starr; 836, F. Newton; 986, R. G. Norell.

Fifteen-year: Dept. 001, B. Martin; 002, E. W. Pagel; 130, J. S. Spolarich; 144, R. A. Ihde; 145, G. C. Kolsky; 170, D. R. White; 191, H. P. Hurt, J. J. Janda; 250, J. M. Seery; 400, Jane E. Damron; 401, J. F. Platt; 491, G. I Baxter; 493, B. J. Handwerker; 512, E. D. Jones; 519, G. L. Hurley Jr.; 565, F. J. Markwith; 756, P. Lewellen Jr.; 988, R. E. Bailey.

Ten-year: Dept. 001, W. D. Burden; 101, J. M. Baker; 130, R. A. Bowers, E. S. Gray; 131, Terry F. Spain; 146, R. R. Donahue; 170, W. L. Park; 193, F. J. Plein; 250, R. A. Fitch, J. S. Poschman; 454, R A. Golem; 460, J. J. Cramer; 506, L. E. Steadman; 518, D. L. Timm, Carolyn M. Wallace; 543, N. E. Bereit, C. D. Strode; 544, C. W. Palechek; 578, K. Maloney; 587, C. A. Garrocq; 780, R. A. Snyder; 834, M. L. Hangen; 979, C. D. Amos, S. M. Benn, G. S. Boyer, W. R. Murray, J. W. Steinmetz; 985, S. Blocker; 986, J. W. Erickson; 988, J. W. Lavender.

STROMBERG-CARLSON

Fifteen-year: Dept. 86, W. A. Eide.

Ten-year: Dept. 81, Carmen E. Randall; 84, C. J. Hayen; 85, G. E. Rice; 86, M. Berrie; 88, J. D. Ventmiller.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff. Lindbergh Field, ext. 491, Bldg. 14 auditorium, 4:30 p.m., Tuesday, Aug. 15, for second shift; 8 a.m., Tuesday, Aug. 22, for first shift; AF Plant 19, ext. 491, Bldg. 3, 1st mezz, Col. B-14 conference room, 8 a.m., Thursday, Aug. 17; Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Monday, Aug. 28.

PROFESSIONAL/TECHNICAL

HI-TEMPERATURE SOLDERING — Several 16-hr. classes will be conducted on soldering procedures using Sb-5 and Sn-10 covering Convair and Fort Worth specs. Classes will begin about mid-August. For information call Dick Forrest, ext. 1931 Kearny Mesa.

DAMAGE PREVENTION — Kearny Mesa, first shift, Tuesdays and Wednesdays, 8-9 and 10-11 a.m., Aug. 8, 9, 15, 16, Sept. 5, 6, 12, 13, Oct. 3, 4. Bldg. 17, Room 8. Lindbergh Field first shift, Wednesdays and Thursdays, 8-9 and 10-11 a.m., Aug. 23, 24, 30, 31, Sept. 20, 21, 27, 28, Oct. 11, 12, 18, 19, 25, 26, Nov. 1, 2, 8, 9, 15, 16. Bldg. 14 auditorium. For information call W. F. Weidenfeller, ext. 1931 KM.

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa.

These may be checked out for home study. Educational services office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Also available are the following management programmed texts: Principles of Management, Basic Supervision of People, How to Conduct a Selection Interview, How to Improve Your Supervisor Skills, Basic Skills in Communications, On-the-Job Training, Cost Reduction and Control for Supervisors, Inventory Management, Effective Interviewing for Supervisors, Improving Your Written Communications, Improving Your Supervisory Error Reduction Skills.

CITY COLLEGE COURSES

Lindbergh Field: Mondays starting Sept. 11, Introduction to Supervision, 4-7 p.m., Room 8, Bldg. 14. Instructor, Hal Rubin. Registration on first night. For reservations call educational services, ext. 491 LF.

Kearny Mesa: Mondays starting Sept. 11. Industrial Economics for Supervisors, Bldg. 17, Room 1, 4:30-7:30 p.m. Instructor, Donn Olsen. Wednesdays starting Sept. 13. Human Relations "A," Bldg. 17, Room 1, 4:30-7:30 p.m. Instructor, Hal Rubin. Thursdays starting Sept. 14. Introduction to Digital Computers, with emphasis on numbering systems and Boolean algebra. Bldg. 17, Room 2, 5-8 p.m. For information call Dick Forrest, ext. 1931 KM. Registration for all classes at first sessions. For reservations call Diana, educational services, ext. 1931 KM.

Personals

CONVAIR

We send our sincere thanks for the kind expression of your sympathy.

Rose Elizabeth Schroeder and Family.

* * *

The family of Anthony J. Rausch (retired 1963) gratefully acknowledges your kind expressions of sympathy at the time of his death.

* * *

I wish to express my thanks and gratitude to all my friends at Electronics and Convair for their thoughtfulness, generosity and sincere concern for myself and my two sons welfare when we were injured in a recent auto accident.

Marie Green
Electronics-San Diego.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N.Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending July 21.

Dept. 001-0, J. W. Weisman; 015-0, M. V. Carrico; 016-0, E. O. Barnes; 019-0, G. G. Grantham (three awards), G. E. Rhea; 027-0, P. W. Byrd, A. I. Cox, C. L. McNeal; 031-0, F. O. Peterson (two awards); 049-0, I. E. Whitbey; 059-3, J. L. Bershaw; 059-9, P. C. DeBaca; 131-4, S. Gerhardt; 140-1, S. Teggart; 141-4, R. G. Lindsey; 142-1, D. R. Mabery; 143-1, R. S. Killgore; 149-3, R. I. Barnes; 149-6, H. E. Salley; 149-7, J. Makis; 250-2, H. A. Buehler; 250-3, J. T. McElroy, W. Russ Jr.; 250-5, H. Medeiros; 401-6, J. L. Vidovich; 780-2, D. E. Hoegh; 810-0, M. A. Grove, L. W. Hesseltine; 820-0, F. D. Heflin; 831-0, L. VonTungeln; 833-2, C. F. Kemper; 979-1, G. W. Fisher, J. F. Harrington; 979-2, J. O. Castle, W. B. Sullivan, J. M. Wardman; 979-3, W. C. Mitchell; 979-6, M. R. Thomason; 985-1, R. B. Pewsey; 985-4, R. D. Brant.

Employe Suggestion awards approved for the week ending July 28.

Dept. 015-0, M. Carmichael; 027-0, M. R. Brown (two awards), P. W. Byrd (three awards), F. J. Serio (two awards), G. Simpson, F. H. Stine, E. E. Yturralde; 059-1, A. Medrano; 142-1, F. Casillas, C. L. Cheves, R. N. Rogers, R. C. Wasmund; 143-3, L. Ortiz; 143-4, J. J. Campbell; 250-5, J. H. Gahagan; 454-0, R. J. Moe; 840-2, L. H. Kramer, E. V. Tieszen; 979-3, B. Goodwin, A. R. Mewbuorn, M. C. Roberts.

Invention Disclosures

CONVAIR

BOWMAN — W. O. III and P. A. SCHUH, Dept. 962-3. Fluidic Control System for Vent Valves.

DETHLEFSEN — R., A. V. LARSON, L. LIEBING, J. P. TINKHAM, Dept. 596-0. Electric Vacuum Arc Micro Thruster Using Solid Propellant.

KERBY — C. M., Dept. 512-2. Thermal Stress Resistant Joint for Large Panels.

O'BARR — G. L., Dept. 572-1. Infinitely Variable Speed, Positive Mechanical Rotary Drive, Power Transmission System.

RODEN — W. A., Dept. 491-0. Overload Protection Circuit.

STROMBERG-CARLSON

CODY—H. B., Dept. 8520. Film Cartridge to Complete Circuit.

CORPEW—C. R., Dept. 8580. Gridded Electron Beam Trim Aperture.

JOHANSON — V. Dept. 8550. Seal Mounted Wire Mesh Screen.

MOORE—J. E., Dept. 8570. High Accuracy AC-DC Transistor Switch.

ROTTMILLER—E., Dept. 8550. Membrane Fabrication Technique.

SMITZER—L. A., Dept. 8520. Half Tone Image Recording Using Shaped Beam Tube. Film Take-Up. Film Cartridge. Film Trannport.

STEBBINS—J. T., Dept. 8570. Frequency Follower.

STINE—R. L., Dept. 8520. Sliding Window Friction Device. Infinitely Variable Film Advance Drive.

TURNAGE—R. E., Dept. 8590. Improved Sonic Coordinate Pen. Cordless Sonic Pen.

WRIGHT—E. L., Dept. 8560. Shaped Electron Lenses.

Rider-Driver

CONVAIR

RIDE WANTED — From Nile and Thorn streets, North Park, to Kearny Mesa, 4:30 p.m. to 1 a.m. shift. Phone Si Messer Jr., ext. 2220 KM or (home) 282-5787.

RIDE WANTED — From Hillcrest to Kearny Mesa, 7:30 to 4:15 shift. Phone Henry Pawlicki, ext. 3073 KM or (home) 295-1331.

Retirements

CONVAIR

AUNCHMAN — Alexander L., Dept. 761. Seniority date May 15, 1953, retired July 31.

BOSSART — Karel J., Dept. 502-0. Seniority date Feb. 16, 1941, retired July 31.

BOSTROM — Robert C., Dept. 452-0. Seniority date Sept. 5, 1956, retired July 31.

BURKHART — Arthur C., Dept. 762. Seniority date Dec. 11, 1947, retired June 30.

CARR — George W., Dept. 059-5. Seniority date May 20, 1947, retired July 31.

CILONA — Antonio, Dept. 250-2. Seniority date Aug. 30, 1950, retired July 3.

FORTUNATO — Saveno J., Dept. 250-2. Seniority date April 11, 1950, retired July 31.

SAUNDERS — Spencer K., Dept. 250-2. Seniority date June 25, 1941, retired July 31.

STEBBINS — George W., Dept. 410-0. Seniority date April 21, 1952, retired July 31.

STEVENS — Rubye G., Dept. 979-3. Seniority date Nov. 12, 1958, retired Jan. 16.

Deaths

CONVAIR

TRASKELL—Anthony P., Dept. 962-1. Died July 20. Survived by his wife, Bonnie; a son, Daniel; a daughter, Becky; mother and sister.

Engineering Award Earned By Dept. 588-0

(Continued from Page 1)

selected the first quarterly banner winner by reviewing and ranking departmental reports on progress toward goals were: Ferrara; W. T. Dorrance, director of special programs; C. L. Adcock, director of advanced systems design; W. W. Fox, director of product design; J. M. Wild, director of engineering technologies; and W. E. L. Boyce, director of research and information sciences.

Factors considered in the rating include number and realism of goals established and the group's performance in working toward them.

T. W. Ochodnicky is Craftsmanship program representative for the engineering department.

Many Tributes Paid Charlie Bossart For Vital Role in Developing Atlas

More than 250 friends paid tribute to K. J. "Charlie" Bossart, the "father of the Atlas," at a no-host retirement dinner in his honor July 31 in the Hanalei Hotel.

Bossart has been associated with the Atlas and its predecessor, the MX-774, since 1946 and has been technical director for Convair and the former Astronautics division since 1957. He will continue to serve Convair as a consultant. He joined Vultee Field in 1941.

The informal after-dinner program began with showing film clips on the MX-774, Project Score, and a Bossart presentation.

"Roving microphones" were handled by Dean H. McCoy and Paul Ferrara as friends recalled amusing incidents from years past in a "Do you remember, Charlie?" Ray Blair Jr., assistant to the Convair general manager, was master of ceremonies.

Congressman Bob Wilson, guest speaker, lauded Bossart as being to the space program what the Wright Brothers were to aviation.

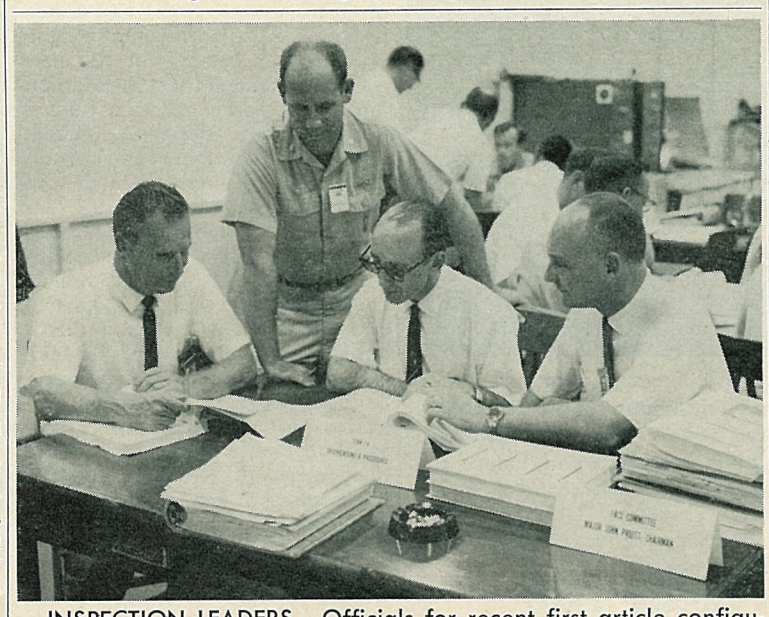
Wilson said the Atlas was the most important strategic weapon this nation or any nation has ever developed and said, thanks to Bossart and his colleagues at Convair, there never was a missile gap between the United States and Russia.

"A grateful nation owes you much thanks for your insistence that this program move ahead," he told Bossart.

A plaque from Roger Lewis, president of General Dynamics, was presented to Bossart by Jack L. Bowers, Convair general manager.

The plaque read: "Karel J. Bossart, General Dynamics and the nation owe much to you. Your faith in a revolutionary concept, your tenacity in achieving a critical national goal, the excellence of your technical leadership, your dedication in times of stress and your quiet confidence were instrumental in creating the U. S. Air Force Atlas which served as a vital element in our country's defense, first lofted free men around the globe and led us to the stars."

Also presented to Bossart and his wife, Connie, were an elaborate silver serving set from those attending; "hard hats" autographed by friends; a portfolio of letters from friends and officials unable to be present; a book of historical Bossart photos; a collection of problem Atlas vent valves, switches, relays and other items encased in plastic; and an ash tray and cartoon from friends at Pomona division.



INSPECTION LEADERS—Officials for recent first article configuration inspection (FACI) for Convair's first Atlas SLV-3A booster (left photo) are, from left, James S. Garcia, chief of the DCAS operations branch; Maj. John Pruitt, FACI chairman for SAMSO; Bernard Mintz, Aerospace Corp. SLV office representative, and J. W. Coddou, Convair production program manager.

New Shot-Peening Facility Now In Operation on Parts for C-5

(Continued from Page 1)

An attachment which will move up and down is to be installed, said Ken Walker, assistant foreman in charge of the facility, that will allow coverage in six directions, cutting down adjustments and time for the process. Also, a "lazy Susan" type of table is to be built for rotating small parts.

One of the important advantages of shot peening parts, such as the C-5 pivot fitting, within the cabinet is the strengthening of welds and increasing fatigue life by relieving stresses built in during manufacturing processes—forming, rolling, welding, Walker explained.

The gantry, with its 4-ft. by 48-ft. bed, is designed especially for shot peening large plank skins. It is equipped with 16 nozzles and an attachment for peening the underside of risers on the skins.

Six operators have been certified for shot peening, according to G. K. Cox, Dept. 001 general foreman responsible for the new facility. Two shifts are now in operation with a third to be added as work load increases.

$7,383 in Con-Trib Donations Approved

Convair Employes' Con-Trib-Club committee members have granted $1,500 to City Rescue Mission for general operating expenses, $700 to the Children's Dental Health Association of San Diego for its annual fund raising campaign, and $500 to Episcopal Community Services for repair of its stake truck.

The committee also has forwarded a check for $3,333 to Junior Achievement of San Diego, the current year contribution toward a $10,000 Con-Trib-Club pledge to Junior Achievement building fund.

Con-Trib committeemen have approved $1,350 for the second time to the San Diego County Department of Public Health for use in "end measles" clinics for children.

Reminder Issued On State Benefits

Employes hospitalized or absent from work seven or more days due to non-occupational accident or illness must file an application for disability benefits with the State of California. Failure to do so may result in loss of hospital or disability benefits.

State claim forms and group insurance claim forms are available at employe services.

ELECTRONICS NAMES CONTRACTS MANAGER

T. C. Courington has accepted the new position of manager of contracts at Electronics-San Diego operations, D. C. Prim, manager, announced.

Courington, who has been manager of contracts for launch vehicle programs at Convair the last year, assumed his new post July 31.

T. C. Courington

He joined Convair in subcontracts in 1957 and transferred to the former Astronautics division as a contracts representative in July of 1958. He was named contracts administrator in 1960 and manager of contracts for Centaur in 1962. He became responsible for both Atlas and Centaur programs when they were combined in 1966.

A native of Alabama, Courington holds a bachelor's degree in business and a degree in law from the University of Alabama.

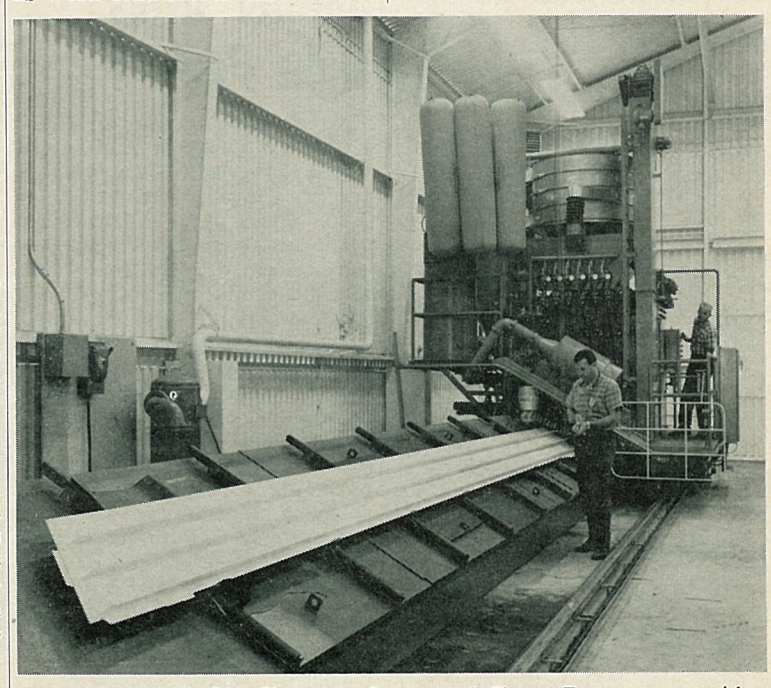
Solar Radiation Tasks Assigned

Mariner 4, the Atlas-launched spacecraft that still performs perfectly after 2½ years and more than a billion miles of space flight, has been assigned a new mission by NASA.

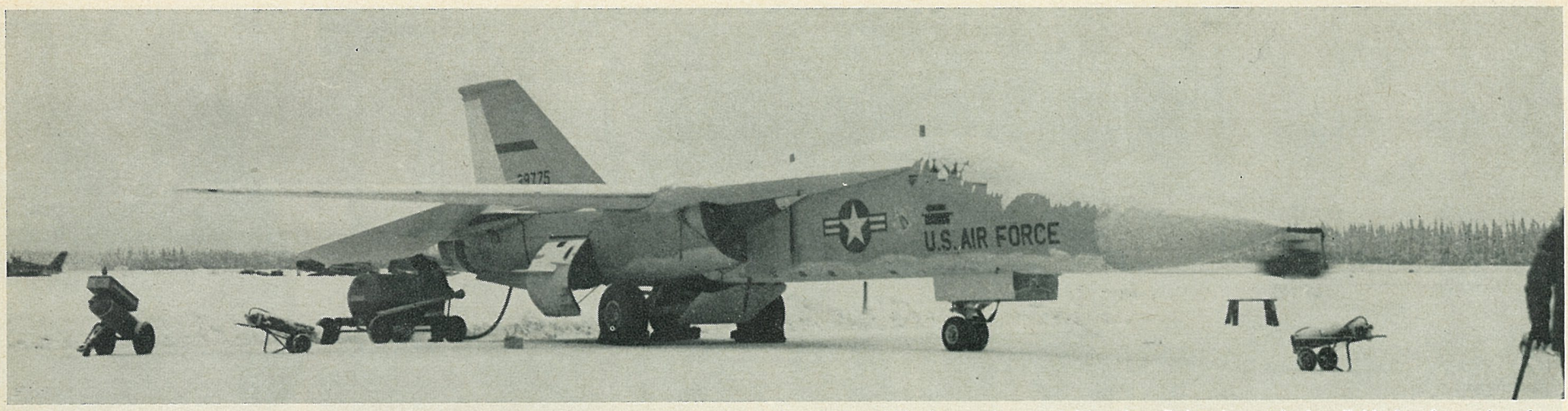
Scientists this month will use the spacecraft and its "sister" craft, Mariner 5, for solar radiation measurements from points millions of miles apart but in a straight line out from the sun during a "solar system lineup" that also will include the earth.

Mariner 4 was lifted into space Nov. 28, 1964, by Atlas 288-D.

Mariner 5 was launched by Atlas SLV-3 No. 5401 June 14 and is on a four-month, 212½-million-mile flight to rendezvous with the planet Venus in October.



SHOT PEENING—Clarence Scott and Elmer Tutterow, machine operators in Convair's new shot peening facility, control shot peening of C-5 plank skin on bed of gantry machine.



ALL-WEATHER—F-111A No. 10 is roasting under the desert sun near Yuma these days. A few months ago, however, it was flying in sub-zero weather at Eilson AFB, Alaska. Ship is proving variable-wing fighter's mettle in all kinds of weather from 40 degrees below zero to 200 degrees above!

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers among General Dynamics divisions. In parentheses are dates when individuals joined the company.)

ROGER W. BROWN (1956) from Pomona division to Material Service as head of industrial relations; **ROBERT E. SUTHERLAND** (1956) from Corporate Headquarters to director of industrial relations, Pomona; **WILLIAM A. MARTIN JR.** (1952) from Convair to foreman, Electronics, San Diego; **JOHN C. LITTRELL** (1962) from Electronics, Rochester to field representative, Pomona; **CASPER E. MYHRVOLD** (1951) from Electronics, Rochester to Electronics, San Diego as senior field engineer; **JOHN B. WRIGHT** (1965) from Electronics, Rochester to product manager, Electronics, San Diego; **JOSEPH L. HARRISON** (1960) from Corporate Headquarters to contract representative, Convair; **JAMES G. MOORE** (1961) from Pomona to Fort Worth as engineering drawings checker; **JAMES F. KOBY** (1940) from Convair to supervisor, Fort Worth (Edwards AFB); **SIDNEY P. BROWER** (1944) from Convair to Fort Worth; **CHARLES J. ZUBARIK JR.** (1967) from Convair (Cape Kennedy) to Fort Worth (Edwards AFB); **KENNETH V. GILBERT** (1966) from Convair to Fort Worth (Edwards AFB); **JACK M. MERRILL** (1964) from Electric Boat to Fort Worth; **CHARLES L. CHUMNEY** (1955) from Convair to Fort Worth (Edwards AFB); **BURNESS M. GIPSON** (1950) from Convair to Fort Worth (Edwards AFB); **GEORGE R. HUGHES** (1959) from Convair to Fort Worth (Edwards AFB); **JAY J. COOPER** (1959) from Convair to Fort Worth (Edwards AFB); **WILLIAM E. MORTON** (1959) from Convair to Fort Worth (Edwards AFB); **T. C. COURINGTON** (1957) from Convair to Electronics-San Diego as manager of contracts.

Grumman Opens Long Island Facility For Production of F-111 Aft Sections

The F-111 Assembly Facility, newest Grumman production site on Long Island, was formally opened last month.

According to Grumman sources, the F-111 facility is "designed to centralize all management functions of the Grumman portions of the program and provide for even more efficient production for all F-111s."

Aft sections for the variable-sweep wing airplane are being turned out of the new facility for final assembly into Air Force F-111As in Fort Worth, and into Navy F-111Bs at Calverton.

Over 800 persons who man the Grumman facility were joined at the ceremonies by leaders from government, the military and industry.

Frank W. Davis, Fort Worth division president, and Clint Towl, chairman of the board and chief executive officer of Grumman, were among those making comments at the opening.

J. T. Cosby, vice president-111 programs, attended the ceremony.

EGG CRATES?—Karen Leinweber, clerk in Convair tooling files, hefts a couple of new batch of rivet trays just fabricated for use on assembly line. Cups of various sizes of rivets fit into holders.

Versions of F-111 Increase to Eight

Eight versions of the F-111 are in various stages of either production or planning at Fort Worth division.

F-111As go to the Air Force. The A designation goes on Tactical Air Command planes through No. 253. TAC plane No. 254 and on, however, will be equipped with the Mark II avionics system and be designated the F-111D.

Other versions of the versatile variable-wing airplane are:

F-111B, Navy.

F-111K, United Kingdom strike/reconnaissance.

TF-111K, United Kingdom trainer/strike.

F-111C, Australian.

FB-111A, bomber.

RF-111A, reconnaissance.

Frozen Then Roasted During Climate Tests F-111 No. 10 Can 'Take It'

The F-111 probably won't be grounded often because of "bad weather."

The all-purpose, all-weather fighter-bomber has already proved it can cut the mustard in extremely cold and humid climates. Now it's winding up hot-weather tests under the searing desert sun.

F-111A No. 10 is the guineaship being used to prove the variable-wing fighter is more than a fair-weather flyer. And thus far, it has made the point convincingly.

First, No. 10 was subjected to extremely cold temperatures in hangars at Eglin AFB, Fla. Purpose: to prove the airplane's systems and electronic circuitry function properly under these conditions.

Then No. 10 flew simulated combat sorties from Panama during the rainy season. Conclusion: the F-111A's performance is unhampered by extremely humid conditions found in tropical climes.

Eilson AFB in Alaska was site for No. 10's next ordeal — extremely cold-weather tests.

The airplane carried out its missions successfully after "soaking" continuously outdoors in temperatures that dropped to as low as 40 below zero.

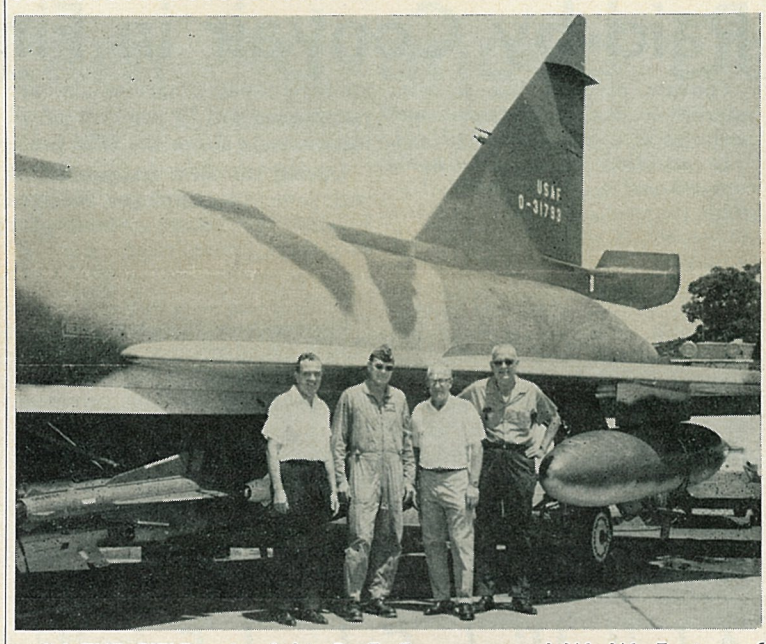
Now the scene shifts to the Marine Corps Air Station near Yuma, Arizona. Here, the airplane is being allowed to soak under the hot desert sun, with canopy closed.

After the plane becomes really roasted, with temperatures in the cockpit soaring as high as 200 degrees F., Air Force Maj. Clifford Diercks climbs into the cockpit and puts the plane through its paces.

"Aim of the desert program is simply to determine the accuracy of the airplane, its systems and ground equipment after remaining indefinitely in extremely hot weather," said Bob Moller, manager of flight test.

Moller said No. 10 was slated to fly about eight specific missions, resulting in from 12 to 14 flights overall.

Tests show the F-111 should prove a reliable and durable weapons system in just about any type of weather.



IN THE FIELD—At right, B. F. Ferguson and W. W. Fenton of Convair pose in front of F-102 based at Udorn Air Base, Thailand, with Ed Havens of Hughes Aircraft and Maj. Norris Price, commander of Detachment Four, 405th Fighter Wing. Ferguson and Fenton were on swing through Southeast Asia in support of F-102s. At time photo was taken thermometer registered 115 degrees, 85 per cent relative humidity. Six inches of rain fell in 30 minutes that same evening!—AF Photo.

Field Service Men Back From Viet Nam Tour

Two Convair men, returning from an eight-week swing through Southeast Asia in support of Convair-built F-102 intercepters based there, were impressed with the dedication of Air Force pilots to their role in the Viet Nam conflict.

"They like the F-102, saying that it is a very capable airplane," reported B. F. Ferguson, F-102 deputy program manager, who with W. W. Fenton, field service representative, made the F-102 service visit.

Their itinerary took them to Clark Air Base in the Philippines, across Viet Nam with artillery flashes lighting the sky beneath their commercial airliner, to Don Muang Air Base at Bangkok, and then to Udorn AB in northwest Thailand, and back to the Philippines by way of Naha AB, Okinawa.

Temperatures soared to as high as 120 humid degrees and never fell below 80, even at night.

The service tour was provided by Convair for assistance with F-102 problems in the field at the request of Maj. Gen. Michael Ingelido, vice commander of 13th Air Force Headquarters, and Col. Charles Yeager, commander of the 405th Fighter Wing, both based at Clark AB.

"One of our 'brain twisters' was figuring out the time difference between San Diego and wherever we happened to be and staying up all night, if necessary, to place calls."

Philippine time is 16 hours ahead of Pacific Coast daylight saving time, and Thailand, 14 hours ahead. So, a call reaching San Diego at 8 a.m. on a Monday morning, for instance, would have to be placed at midnight Tuesday from the Philippines.

Two F-102 squadrons, the 509th FIS and the 64th FIS, are based at Clark Air Base. The 509th is commanded by Col. Glen Dunaway who captained the F-106 squadron out of Selfridge AFB, Mich., to victory in the 1965 William Tell weapons meet. Lt. William Turner is commander of the 64th. It was the second F-102 squadron equipped with the air-to-air refueling system to be deployed overseas a year ago.

Stromberg-Carlson Men Issued Patents

Patents have been issued to four men at Stromberg-Carlson Data Products in San Diego. They are G. C. Durr, Information Processing and Display Systems; O. F. Hamann, Photosensitive Logic Circuitry Utilizing Light Pipes; J. H. Brown, CRT Having Internal Moving Carriage With Plural Matrices of Beam Shaping Apertures; O. F. Hamann, Electroluminescent Display Device Using Plastic Foam; C. R. Corpew, CRT With Beam Shaping Apertures and Non-Shaping Apertures.

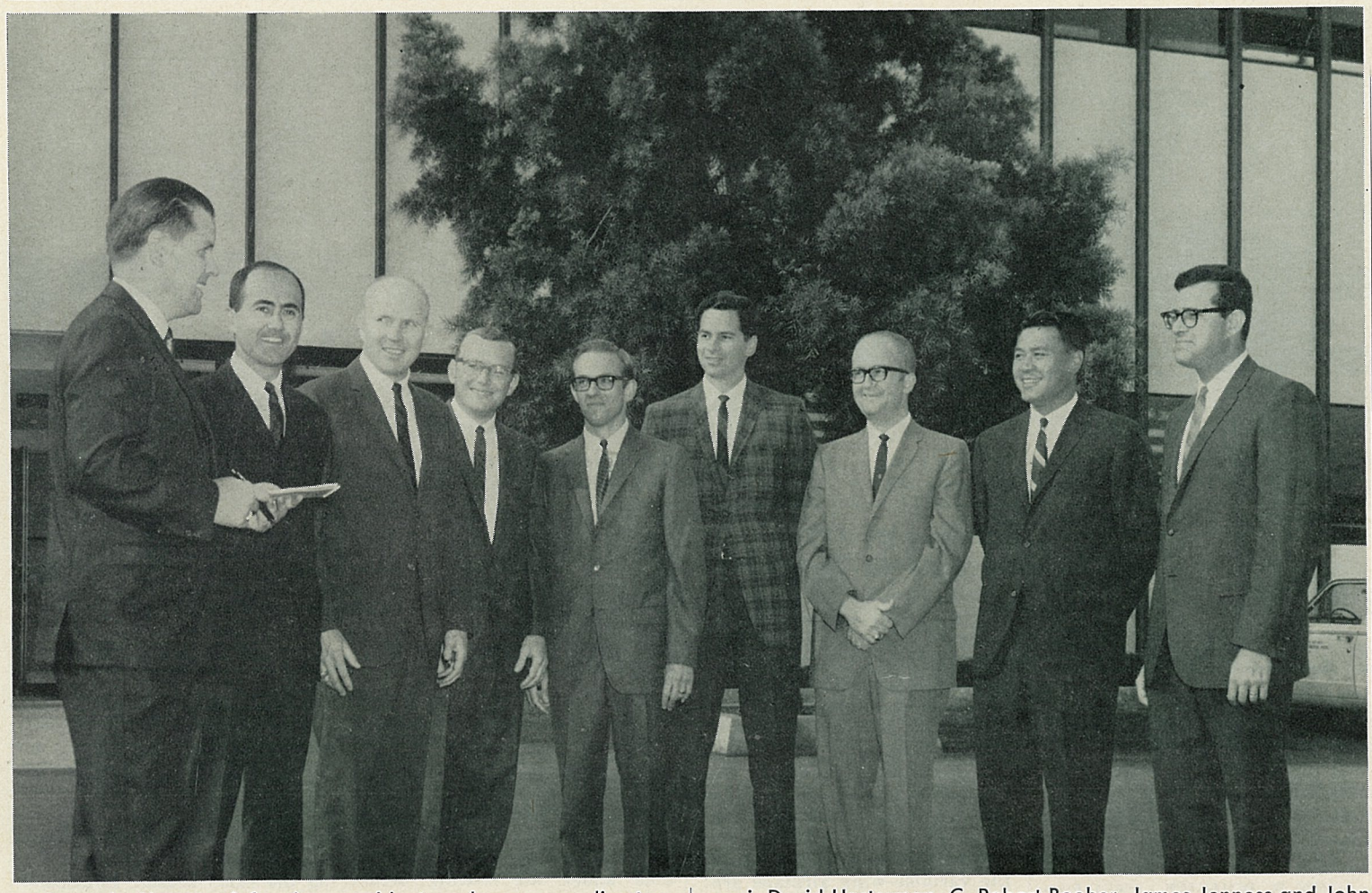
White Sands Appeal For Sand Satisfied

Sand for White Sands?

Buyers in Pomona division's engineering procurement are accustomed to requests for odd items to be used in engineering research and development work but this "Coal-for-Newcastle" type request recently had the buyers shaking their heads.

It was a legitimate request. Dirt with known compacting qualities was needed for an engineering test. The required dirt was available in the Pomona area. The test site was at White Sands, N.M.

So . . . sand was hauled to White Sands.



Grant L. Hansen, left, vice president and program director-launch vehicle programs, compliments employes in his departments who recently received master's and doctoral degrees. From left are Thomas Becea, Charles Oliver, Gene Anspach, Michael Debreceni, David Hosterman, C. Robert Booher, James Jenness and John Silverstein. Not present for photo were Richard Pleasant and Frederick Kuenzel. They were among 22 from division who received advanced degrees in June.

Ray Blair Jr., left, assistant to th nvair g right, director of operations, congratulate Jam Fletcher J. Stewart Jr. on their completion of ceived juris doctor and Stewart master of busi

C. W. Blakey, left, Convair dire r of co master's degree in business administration for contract representative. Hal Rubin of education

Junior Colleges Offer Courses In Many Fields

San Diego County has seven junior colleges offering lower-division studies leading to two-year associate in arts and associate in science degrees, certificates of proficiency in several fields and courses that meet special vocational needs of adults.

High school graduation and formal admission is not required for enrollment in many of the courses, including most vocational classes and those given at Convair facilities. Formal admission is required for degree or certificate program students.

The junior colleges include San Diego City College at 1425 Russ Blvd., Mesa College at 7250 Artillery Road on Kearny Mesa, San Diego Evening College with classes at both the City College and Mesa College campuses and other locations, Grossmont Junior College in El Cajon, Southwestern Junior College in Chula Vista and Palomar Junior College in San Marcos.

Deadline for admission to the San Diego junior colleges is Aug. 25 with registration dates to be assigned after acceptance. Classes begin Sept. 11.

Applications for admission to San Diego Evening College may be filed with the admissions office, Room A-114, at the City College campus or the student personnel office, Room A-111, at the Mesa College campus.

Admission for in-plant courses at Convair facilities may be arranged through educational services, ext. 1931 KM.

Information on registration for courses at the other junior colleges may be obtained by calling the college admissions office.

Counseling Service Offered Employes

A wide range of counseling services is offered by Convair division educational services personnel for employes wishing to further their education.

The educational services offices are in Bldg. 17 at Kearny Mesa, ext. 1931, and in Bldg. 16 at Lindbergh Field, ext. 491.

School catalogues, class schedules and special-course bulletins also are available at each location.

Nearly $50,000 Tuition Refunds Paid by Convair in First Half' 67

Convair division has a vital interest in the development and progress of each of its employes.

In addition to the division's comprehensive Management Upgrade program, individual self-improvement is encouraged through a number of special educational assistance programs including the tuition refund, irregular workweek and advanced-degree work-study programs and awarding of doctoral fellowships.

Of greatest benefit to most is the tuition refund plan under which employes may be reimbursed for tuition costs for job-related, college-level courses to a maximum of $225 per calendar year.

Employes in approved graduate-level study programs also are reimbursed for 75 per cent of all tuition costs above the $225 limit.

During the first six months of this year, 430 employes received $47,018 in tuition refunds for successful completion of 787 courses—an average of $59.74 per course.

"Interest on the part of employes in advancing their education is growing," Jack Croft, chief of educational services, commented.

"Rapid changes in technology and the need for increased knowledge and skills in business and industry make continuing one's education more important today than ever before."

During the entire year last year, 476 Convair employes received tuition refunds totaling $46,700 after completing 912 courses.

The division increased the tuition refund limit from $150 to $225 per year beginning with the fall semester last year to encourage maximum possible participation in evening college and university-level studies.

Requests for tuition refund (form A346) for job-related courses should be submitted to educational services before the starting date of classes and will not be approved if received more than three weeks after the first class session.

Adult High School Enrollment Can Begin With a Telephone Call

Hundreds of General Dynamics employes were among 35,000 adults who attended San Diego City Schools' adult high school classes last year and a number were among the 1,172 receiving high school diplomas.

Major adult high school departments include business education, language, history, home economics, industrial arts, fine arts, mathematics and science.

Courses ranging from reading improvement, in which more than 5,000 San Diego adults have more than doubled their reading speed, to adult physical fitness and household repair and maintenance have wide appeal.

Enrolling in an adult high school is easy, requiring only calling the nearest school for a schedule of classes, talking with a counselor if you wish to work for high school credit and attending the first meeting of classes desired.

Names, addresses and phone numbers of the adult schools are: Clairemont, 4150 Ute Dr., 274-3422; Hoover-Crawford, 4474 El Cajon Blvd., 282-7683; Patrick Henry, 8204 San Carlos Dr., 465-6331; Midway, 3249 Fordham St., 223-1671; North Shores, 2475 Grand Ave., 273-3221; San Diego, 12th and Russ Sts., 233-7402; and Southeast, 6905 Skyline Dr., 262-8658.

Fall semester classes begin Sept. 11 at more than 100 locations throughout the city. General information can be obtained by calling the department of adult education, 233-0181, ext. 51, or Convair educational services offices.

There is no charge for high school credit classes and a modest fee for some special-interest courses.

Students working toward a high school diploma receive credit for work experience, military service, previous schooling and may receive some credit for scores on standardized tests.

Each of the adult schools offers business education courses including instruction in typing, shorthand, record-keeping, real estate law and investments. A special home economics program also is offered by each school.

Three College Courses Scheduled In-Plant During Fall Semester

Three three-unit San Diego Evening College courses in the Certificate in Supervision program will be offered at Lindbergh Field and Kearny Mesa during the fall semester.

"Introduction to Supervision" will be offered from 4 to 7 p.m. Mondays beginning Sept. 11 in Bldg. 14, Room 8, at Lindbergh Field with Hal Rubin of educational services as instructor. For advance registration phone ext. 491 LF.

"Industrial Economics" will be given from 4:30 to 7:30 p.m. Mondays beginning Sept. 11 and "Human Relations-A" from 4:30 to 7:30 p.m. Wednesdays beginning Sept. 13 in Bldg. 17, Room 1, at Kearny Mesa. Donn Olsen of educational services will be instructor for "Industrial Economics" and Rubin for "Human Relations-A." For advance registration phone ext. 1931 KM.

Completion of 10 three-unit courses are required for the certificate. Twenty-two employes completed the "Introduction to Supervision" course last semester at Kearny Mesa. Both "Industrial Economics" and "Human Relations-A" are introductory courses for two-semester subjects.

Phone Rubin, certificate program coordinator, for information at ext. 1931 KM. Registration also will be accepted at the first class meeting. Cost is $1.50 per semester for Associated Students membership plus books.

San Diego Are For Higher

Local colleges and universities o ployes in the San Diego area almo self-improvement by college studie graduate-level courses related to th

Following, in brief, is informatio the local colleges and universities dates:

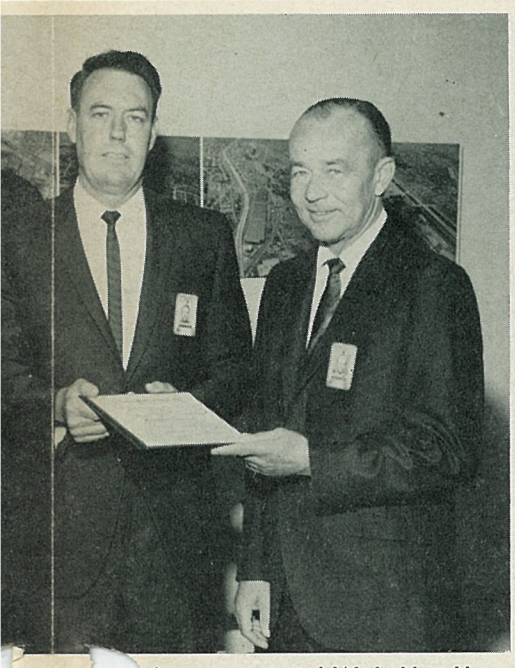
San Diego State College offers co study fields and curricula leading than 35 fields. Many of the courses afternoon and evening. Registratio beginning Sept. 18. (Deadline for a new or re-entering students is pas

University of California at San and doctoral degrees in aerospace sciences, chemistry, earth ences, ics, oceanography, philos y and offered in biology, economics, Engl tion is scheduled the week of Sept Oct. 3.

University of California Extensi any adult who can benefit from un personnel serve as instructors for m istration, engineering and mathem Sept. 25 with students to enroll by

California Western University c doctoral degrees in its colleges of business and economics, school of e graduate studies division. Registra ning students is Sept. 16 with clas

University of San Diego offers b arts and sciences through its colle program requires four years for co semester schedule and classes from per week. Beginning law studen semester only and a bachelor's de tration is Sept. 5 with classes begi



nvair c... al manager, and W. L. Van Horn, ulate James E. Wade, second from left, and letion of advanced-degree studies. Wade re- er of business administration degree.

r of con...acts, reviews curriculum that led to tion for K. H. Griesbaum, center, Dept. 110-1 educational services is at right.

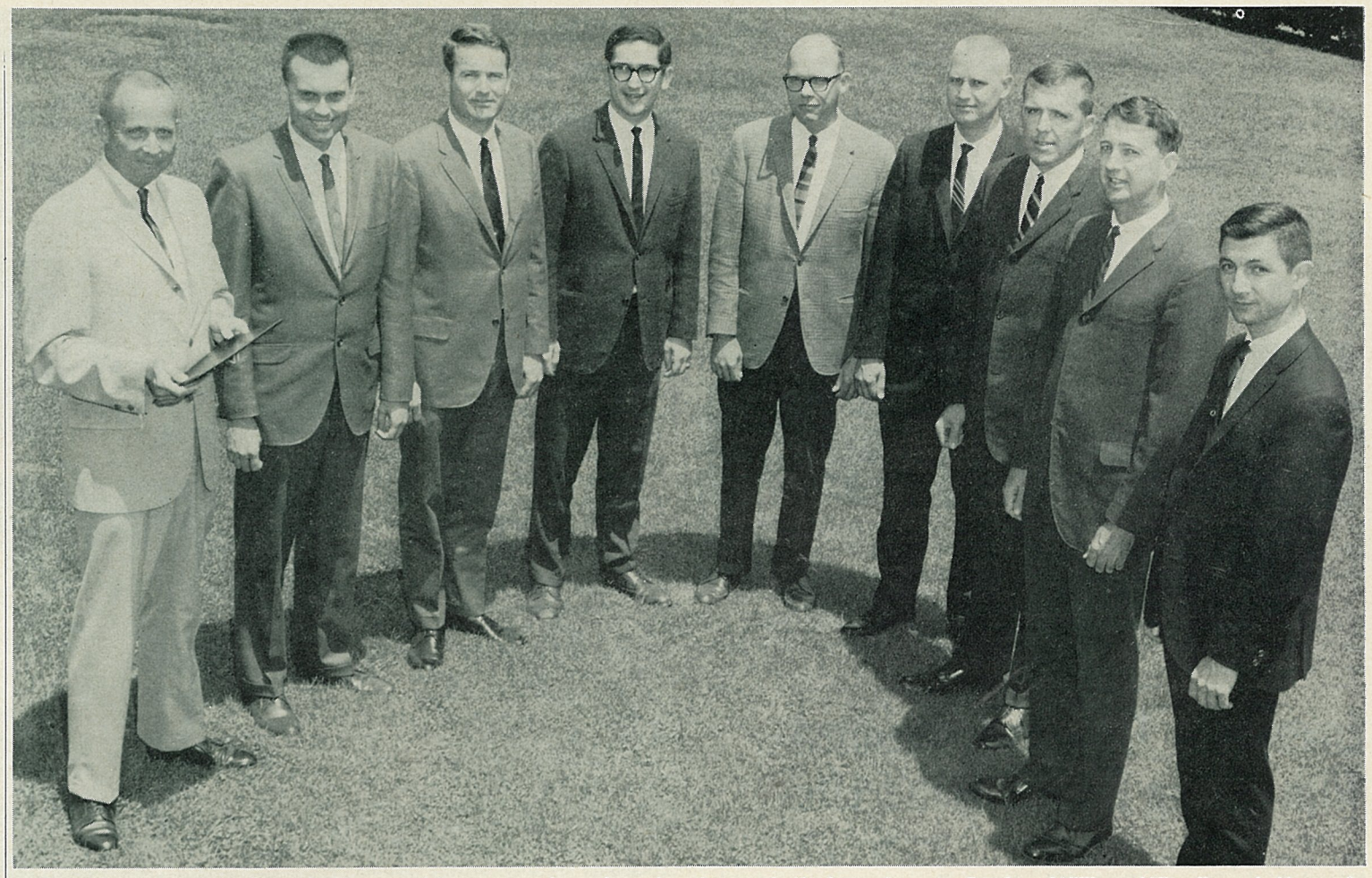
...Area a Center ...ner Learning

...rsities offer General Dynamics em- ...a almost unlimited opportunity for ...e studies, taking undergraduate or ...ed to their specific career field. ...ormation on curriculum offered by ...versities with registration deadline

...ffers courses in more than 50 major ...ading to master's degrees in more ... courses are offered during the late ...gistration is Sept. 13 with classes ...ne for application for admission for ... is past.)

...at San Diego offers both master's ...ospace and mechanical engineering ...ences, ...arine biology, mathemat- ...y and ...ysics. Doctorates also are ...cs, English and literature. Registra- ...of Sept. 25 with classes beginning

...Extension offers many courses for ...from university-level study. Convair ...rs for many of the business admin- ...mathematics courses. Classes begin ...roll by second class meeting. ...ersity offers bachelor, master and ...ges of arts and sciences, school of ...ool of education, school of law and ...Registration for graduate and eve- ...ith classes beginning Sept. 21. ...offers bachelor degree programs in ...ts colleges. Its evening law school ...s for completion with a 10-unit per ...es from 6 to 10 p.m. three evenings ... students are admitted in the fall ...or's degree is a prerequisite. Regis- ...es beginning Sept. 7.



E. R. Peterson, left, Convair vice president-research and engineering, confers with employes from his departments who received advanced degrees in June. From left are Thomas Gordinier, Gordon Vanderslice Jr., Raymond Waligorski, Franklyn Steketee, Bernard Kuchta, Jerome Butsko, William Witzell and Howard Peterson. James Miller also received degree. Group later met with Peterson and other officials for informal discussion on their educational achievements.

Dozen Are Working Toward PhD Degrees

Convair division had 12 employes enrolled in courses leading toward PhD degrees during the spring semester.

The employes and their department numbers were Ola Brevig, 584-0; Kit R. Burton, 966-3; Thomas A. Campbell, 591-0; Andrew R. Marchese, 584-1; Edward C. Jones, 955-0; Walter A. Marggraf, 591-0; Roger C. McKee, 130-7; Seymour J. Rose, 142-1; Herman A. Rosenthal, 584-0; Stephen D. Royer, 110-2; John W. Steadman, 592-0, and Walter G. Thomson, 592-0.

An additional 151 employes took graduate courses leading toward a master's degree during the first six months of the year.

22 From Convair Division Earn Advanced Degrees

Twenty-two Convair division employes received master's and doctoral degrees from four colleges and universities in the San Diego area in June.

Sixteen received master's degrees from San Diego State College in the fields of business administration, mechanical engineering, electrical engineering and aerospace engineering.

Four received juris doctor degrees following four years of evening law study at the University of San Diego, one a master of science in engineering sciences degree from University of California at San Diego and one a master of science in management degree from Cal Western University.

"This is a graphic example of the interest and concern of Convair employes in upgrading themselves and their skills," Jack Croft, chief of educational services, said.

"The division's advanced degree and tuition-refund policies provide substantial aid for employes pursuing advanced studies in job-related fields."

The 22 advanced degrees received by employes in June marked a substantial increase in number awarded at one time. A total of 17 employes received advanced degrees during the entire school year last year.

The new advanced-degree holders, listed by division staff area, departmental number and field of study are:

Contracts—K. H. Griesbaum, 110-1, business administration.

Community relations—James E. Wade, 100-1, law.

Operations—Fletcher J. Stewart Jr., 200-0, business administration.

Launch vehicle programs—Charles H. Oliver, 984-1, business administration; Richard L. Pleasant, 966-3, mechanical engineering; C. Robert Booher Jr., 966-4, aerospace engineering; James H. Jenness, 966-4, aerospace engineering; John P. Silverstein, 958-6, electrical engineering; Gene R. Anspach, 962-2, mechanical engineering; David W. Hosterman, 961-8, mechanical engineering; Frederick D. Kuenzel, 967-4, engineering sciences; Thomas G. Becea, 962-2, law, and Michael J. Debreceni, 962-2, mechanical engineering.

Research and engineering—Gordon R. Vanderslice Jr., 587-1, mechanical engineering; Howard C. Peterson, 533-2, electrical engineering; Franklyn D. Steketee, 585-0, electrical engineering; Bernard J. Kuchta, 585-0, aerospace engineering; Jerome E. Butsko, 583-0, aerospace engineering; Raymond P. Waligorski, 553-1, electrical engineering; William E. Witzell, 572-1, management science; Thomas H. Gordinier, 565-2, law, and James H. Miller, 596-0, law.

Each of the degree winners has been commended by his respective division staff member for furthering his educational development and devoting the hundreds of off-duty hours in studies required to earn his advanced degree.

Each individual achieving a master's or doctorate in a subject area related to his job classification also is considered for an increase in salary.

The special advanced degree salary review is arranged by educational services after notification of the degree has been made by the employe through his supervisor. Consideration also is given to whether a change in job classification is appropriate.

Award of Bachelor Degree Climaxes Nine Year Effort

Larry D. Green, an inspection leadman in Convair's Dept. 143-1 is typical of a large number of employes who received bachelor's degrees in June.

Green, who received a B.A. in industrial arts at San Diego State, has been a Convair employe 12 years and has been working toward his degree for nine years, attending classes during off-duty hours. He is 34, married and has two children.

While working the evening shift this summer, he already is earning six units toward his master's by serving during the day as an instructor-technician for a National Defense Education Act course at San Diego State. Green is teaching industrial techniques of materials testing in the course, which is being attended by 25 industrial arts teachers from the western states.

Many earn bachelor's degrees through evening studies at San Diego State or California Western University. Lower-division courses required for the degree also can be taken at San Diego Evening College, 1425 Russ Blvd.

Employes may arrange for an irregular 40-hour work week during their junior and senior year if needed to take required courses not offered during the evening. Application forms (A3784) are available at educational services offices.

Associate in Science Degrees Earned by 8

Eight Convair and Defense Contract Administration Services employes were awarded associate in science degrees in quality control and reliability from San Diego Evening College in June.

They were Warren H. Behrens, 144-1; Felix A. Biramontes, DCAS; Edgar Caldwell, 149-1; Gary E. Duplissey, 141-3; William E. Foster, DCAS; Pauline M. Harrington, DCAS; Ray B. Kalanquin, 957-2, and Edward J. Yannaccone, 149-3.

Two other employes—Glen A. Gibbons, 149-1, and Wilbur W. Lacy, 144-1—completed requirements for certificates in quality control and reliability.

Convair personnel have served as instructors in the Evening College quality control and reliability program. They include William Olson, 144-1; W. T. Hollar, 141-3; J. H. Rusk, 958-4; J.Q.A. Wickham, 958-6; G. D. Koulaxizes, 146-3; W. A. Dershem, 142-1; S. W. Gill, 142-1, and R. W. Shaffer, 170-2.

Record Number Attend Technical Courses, Seminars

A record 371 Convair division employes attended 100 technical and management short courses and seminars sponsored by colleges and universities, technical organizations and industrial and research firms during the first six months of this year.

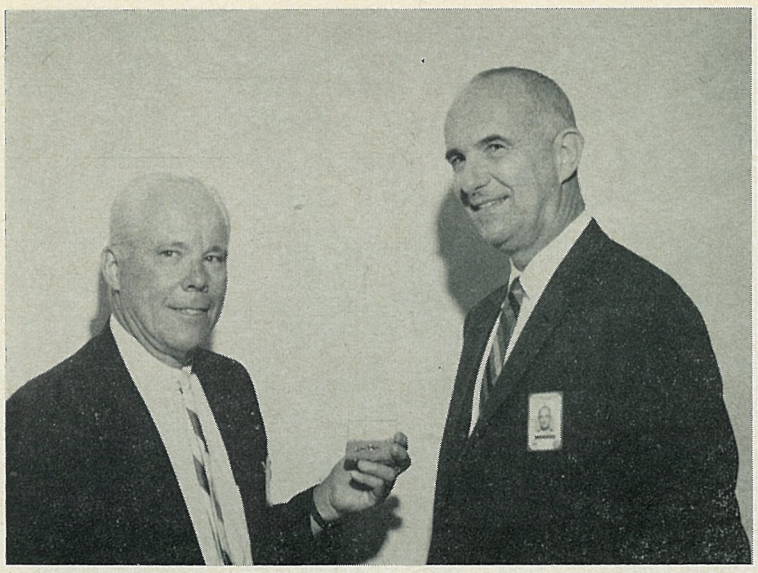
The division's educational services section provided $26,609 for registration and enrollment fees. Travel and per diem costs also were paid by the division through the employes' departments.

Of the total, 271 employes attended 58 technical short courses and seminars and 80 attended 42 management short courses and seminars.

During the entire year last year, 284 employes were enrolled in similar conferences with 202 attending technical and 82 management short courses and seminars.

Requests for attendance at such meetings (form 5605), signed by the supervisor and approved by the department manager, are to be sent with registration forms to educational services, at least 10 days prior to start of the seminar. Approval of the appropriate division staff member also is required when total cost is $500 or more.

Justification for sending the employe, information on how his attendance may benefit the division and an itemization of costs are included in requests.



SERVICE MILESTONE—C. N. Crocker, left, accounts payable supervisor in Dept. 191-0, has been awarded 40-year service pin (tie clasp) by Jack L. Bowers, Convair general manager. Crocker started with Stinson in Northville, Mich., before the division moved to Wayne, Ind., later served as treasurer of Nashville Division and has been supervisor of accounts payable with Convair and its predecessor firms in San Diego since 1949.

Emergency Training Is Credited With Saving Injured Man's Life

Clear thinking in an emergency last month probably saved the life of A. A. Duncan, Dept. 031, at Convair's Lindbergh Field plant.

Duncan was struck on the left side of his head and knocked unconscious by a heavy piece of extruded angle he was cutting on a table saw in Bldg. 5's experimental area. The accident occurred early the morning of July 23, at 1:15 a.m.

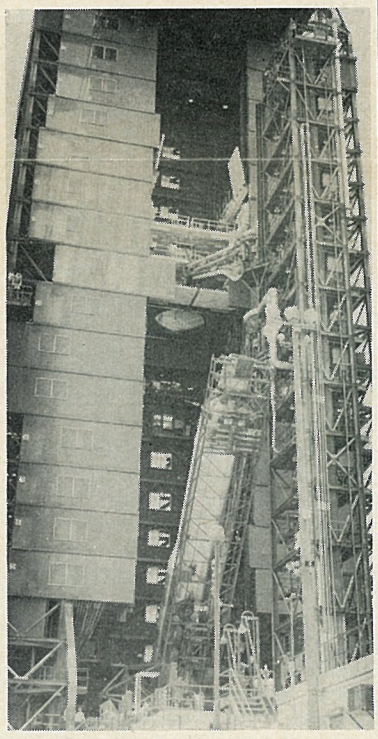
Four fellow employes in the area heard the noise and immediately rushed to Duncan's assistance. A. V. Elo, leadman, dialed the emergency extension number for the ambulance. W. E. Sampson opened the large double doors and stood outside to direct attendants to the injured man, who lay 75 feet inside the building. The ambulance was at the scene within two or three minutes after the call.

Meanwhile, G. F. Cooper and J. L. Martin attended to Duncan's comfort as well as they could, placing cloths under his head and checking the flow of blood.

Duncan was at Mercy Hospital and receiving medical attention within 15 minutes of the accident!

The doctor on duty said that a few minutes delay might have been fatal. As it was, Duncan was at the hospital before going into shock and before losing too much blood.

"We are proud of the way our men went into action, carrying out emergency instructions without wasting a second," Nick Keough, manager of engineering prototype factory, said. "Our constant emphasis on first aid procedures pays off in a big way when a man's life is at stake."



NEW BOOSTER—Convair's first Atlas SLV-3C booster (No. 5901-C) is raised into position at Complex 36-B at Eastern Test Range. It will be booster for Atlas-Centaur 13 flight to send Surveyor 5 to moon.

PHOTO ENGINEERS MEETING IN LA

Gene Keefer, Convair chief of motion pictures, is publicity chairman for the 12th annual national symposium of the Society of Photo-Optical Instrumentation Engineers being held this week (Aug. 7-11) in Los Angeles.

ELECTRONICS GROUP ELECTS LANGORD

Joel Langord, Convair Dept. 545-5, is treasurer and electronic warfare consultant of the newly-formed San Diego chapter of the Association of Old Crows, national organization of electronic warfare.

Lindbergh Field Sections Relocate Into Building 8

Reliability control and planning and design functions of plant engineering at Lindbergh Field plant have been relocated into Bldg. 8, former data processing building, as of this week.

R. H. Gilliland, manager of LF reliability control; Lloyd Stuckey, chief of quality assurance; and Charles Wallman, chief of quality control, and around 35 reliability control personnel are occupying the north end of the west half of the floor.

Around 40 plant engineering people under Ray Calen, supervisor of planning, and Wes Muse, supervisor of design, are located in the south end of the same area.

Archives were consolidated into the entire east half of the floor to make room for the move.

Access is by outside stairways at either the north or south ends.

Plant engineering maintenance functions will remain in Bldg. 7, but are being consolidated in the center section. Office of Vern Sharp, general foreman of maintenance, will be across the hall just south of its present location.

There are no changes in phone extensions of any of the people involved in the moves.

The north end of Bldg. 7 vacated by the relocation of reliability control and plant engineering will be used entirely for tool storage. The former tool storage building, Bldg. 45, will be converted into a chemical etching facility.

Report on Annual Meeting Available

A summary of the annual meeting of General Dynamics share owners and a report for the three months ended March 31, 1967, has been distributed by supervisors to Convair employes holding Company stock through the General Dynamics Savings and Stock Investment Plan.

Additional copies can be obtained by calling employe services, ext. 2657 KM.

Pylons Win Title of National League

Pylons swept the National League in CRA's slow pitch softball tourney by downing the Ballimore Oreos, 7-2, Aug. 2, at the CRA field. Pylons and the Oreos went into their final game tied at 4 wins, 1 loss. Pylons won the first round.

SCULPTURE EARNS SHOW AWARD

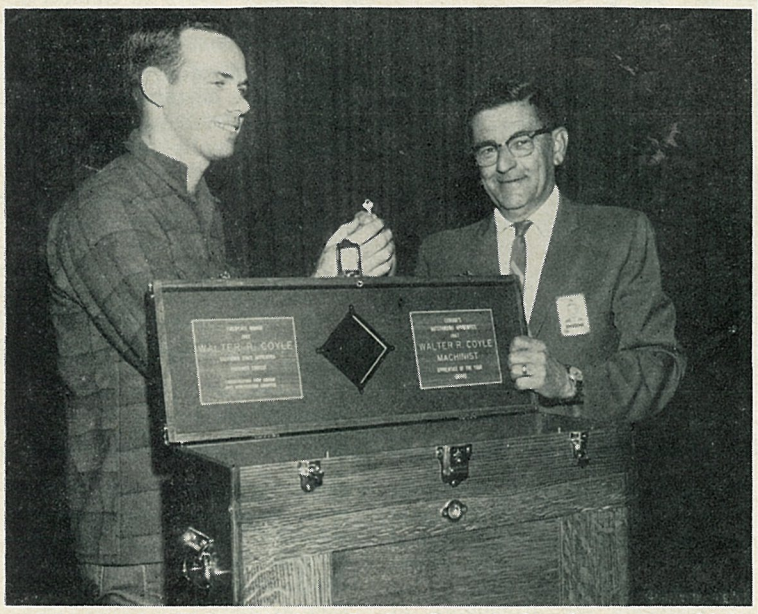
Sculpture of Frank Morgan, Convair Dept. 533-2, won an honorable mention in the Art Show of the San Diego County Fair last month. The sculpture, "Lida and the Swan," is of epoxy resin and fiber glass and stands 25 inches high.

WALT DISNEY FILM SET FOR AUG. 19

Youngsters, and parents too, are invited to the CRA-sponsored movie showing of Walt Disney's "Sammy, the Way Out Seal," Saturday, Aug. 19, at 1 p.m. in CRA Clubhouse auditorium. Price is 20 cents for adults or children.

BRIDGE WINNERS

Winners in CRA Bridge Club contract bridge play July 28 were Bernhard Blutinger and John Gimbel, east-west, and Sally Ishihara and Don Leistico, north-south.

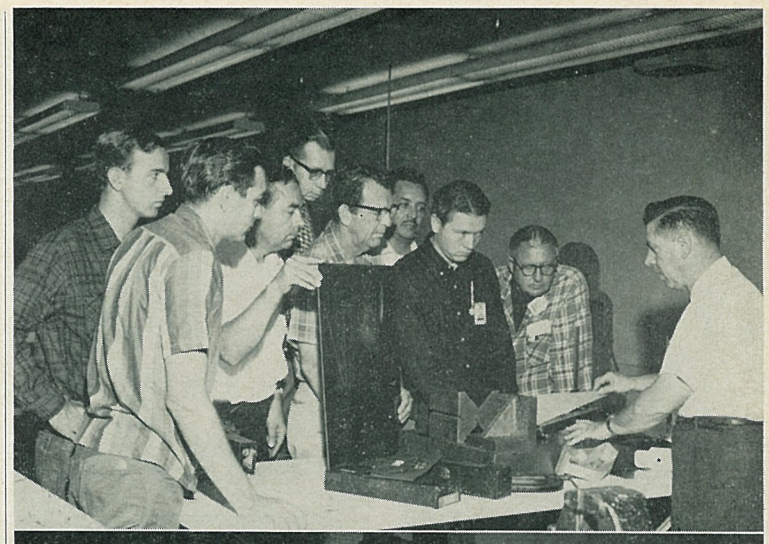


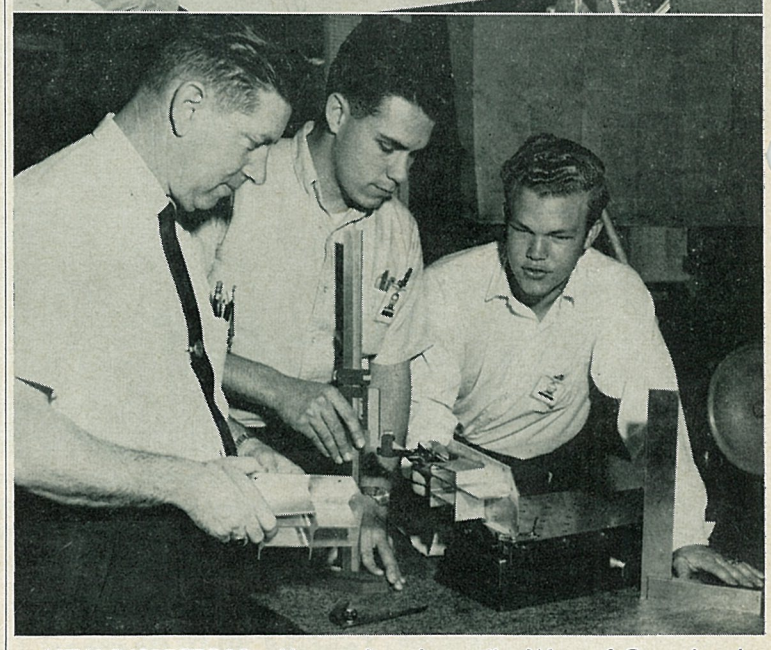
TOP APPRENTICE—Walter Coyle, Convair fourth-year machinist apprentice, receives key from Frank Blair, factory manager at Lindbergh Field, to tool chest given him for winning Outstanding Apprentice honors for 1967. Coyle was first-place winner in state apprentice machinist contest this spring.

CON-TRIB-CLUB "Signed up once for all." CON-TRIB-CLUB

Salvage Schedule

Next employes' sales day at the Lindbergh Field salvage yard, adjacent to Gate 5, is Aug. 19.





NEW INSPECTORS—Upper shot shows Jim Watt of Convair educational services instructing inspection class in use of sine-bar as inspection tool. In lower photo, inspector traineees Larry Hanson (center) and Chuck Stebbins (right) measure compound angle with sine plate as they demonstrate what they learned in shop math training to Instructor Watt.

Inspection Trainees Complete Extensive Training Program

First group of inspection trainees at Convair this month completed an extensive training program which took them through all phases of modern inspection methods with "excellent results," according to Lloyd Stuckey, chief of quality assurance at Lindbergh Field plant where the course was held.

The course, first formal one held in several years, extended over eight weeks, four in the classroom and four on the job. Two separate classes, under the Manpower Development Training Act, were sponsored by quality control and educational services. One class was composed of nine quality control employes recommended by their supervisors for potential upgrade. The other class, also of nine, consisted entirely of young men — all new hires right out of high school or fresh from military service.

"The course was organized to meet the increased need for inspectors, especially on machined parts as our C-5 and F-111 production builds up," Stuckey said. "And, we have been more than satisfied with the result. The trainees have shown that they want to do a good job and they are living up to everything we require of inspectors as they go into their actual work on the production floor."

Gerry Townsend of quality assurance and Jim Watt of educational services coordinated and instructed.

Subject material covered inspection practices and shop methods for fabrication and machined parts inspection; math review; blueprint reading; inspection forms; planning and material reviews; specs and their relation to blueprints and planning; inspection tools; aircraft materials, both raw stock and finished parts and their identification; tooling and its application in inspection and the manufacturing of parts and assemblies.

All nine subjects had to be assimilated satisfactorily to qualify for certificates of completion.

Stuckey said that another course for young trainees will start next Monday, Aug. 14.

SAFETY GROUP—Recently-formed safety committee at Stromberg-Carlson Data Products are (seated) Roy Dieter, manager of plant engineering, chairman, and Clete Klein of production engineering. Standing, from left, are Woody Wilson, engineering; Pete Lata, model shop; Charles Licastri, factory superintendent; and Jack Swank, industrial relations.

Equitation Show and Gymkhana Slated For Aug. 19-20 Weekend

Riders, young and old, will have two chances at trophies at the double-event competition staged Saturday and Sunday, Aug. 19-20, in the CRA horse ring.

An open equitation show, approved by the Trainers' Association, will be held on Saturday and gymkhana competition all day Sunday.

Twenty classes will be open for adults, juniors, and children in both events. Entry fee for the equitation show is $4 per class for adults, and $3 per class for juniors. Fee for gymkhana classes is $1 for both adults and juniors. High-point trophy, trophies and ribbons in each class will be awarded both days.

Don McDaniel of Scottsdale, Ariz., will judge equitation and Alan Balch of San Diego will announce.

Virgil Selph of El Cajon will be gymkhana judge and Jay Harmer, announcer.

Both events begin at 8:30 in the morning and continue throughout each day. The Convair Riders Junior Drill Team, under instruction of Paula Smith, will present the special entertainment at noon on Saturday. Sunday spectators will see George Myers of Lomita put his trained Appaloosa stallion, Pat Hand, through its paces.

Boyd Spencley, show manager, may be reached at his home, 276-3954, for further information.

Three Suggestions Merit $3,000 Payoff

Three Convair division employes recently received Employe Suggestion award checks totaling more than $3,000.

Art Medrano, a project analyst in Dept. 059-1, received $1,526.90 for a suggestion that has eliminated an unnecessary budget report by regulated assembly for the C-5 program.

H. A. Buehler, a senior design and construction engineer in Dept. 250-2, and James Makis, a process analyst in Dept. 149-7, each received $793.85 for suggesting a change in the landing field mats production line that eliminated pan assembly skin distortion during welding.

Wives Will Lunch At Top of Tower

Convair Wives have until next Monday to make reservations for their regular monthly luncheon which will be held Aug. 16 at the Top of the Tower Restaurant, 717 Broadway Ave.

Hostesses are Vera Whitbey and Jean Beatty. Reservations must be called to Joan Chiarappa, 274-2503; Anita Klepach, 264-1013; or Frances Thompson, 278-1942 by 5 p.m. Aug. 14.

The monthly potluck luncheon and craft session will be the following Wednesday, Aug. 23, at the CRA Clubhouse, Kearny Mesa, at noon.

Last of IBM 7010s Retired by Convair

An IBM 7010, the last second-generation digital business computer used by Convair division, was retired from service last month at Kearny Mesa.

Third-generation IBM 360 Model 50 and Model 65 business computers are now being used for reduced equipment leasing and operating costs and increased capability.

Reports produced by the computers include those for payroll and personnel accounting, manufacturing control, material records, engineering releases, labor and cost distribution, project budgets, indirect budgets, planning, performance, and accounts payable and receivable.

Retirement Options Require Notice

Advance notice is necessary if a retiring Convair employe wishes to arrange continuation of retirement benefits for his surviving spouse if he should die first.

Two survivorship optional plans are available for both hourly and salaried employes but must be requested three years in advance. Both allow a monthly retirement benefit to be paid to the surviving spouse.

Details can be obtained from employe services office at Kearny Mesa, ext. 2328.

Coineers to Learn Display Preparation

Coineers will learn from Sylvia Haffner how to prepare a display at their Aug. 16 meeting, 8 p.m., in the Convair cafeteria, Lindbergh Field plant.

Beginning this month there will be prizes in addition to the regular trophy for exhibits.

Door prizes will be four Bermuda crowns. A $5 gold piece, proof sets, cinco and dos pesos, and several $1 pieces from 1881 to 1925 will go in the drawing.

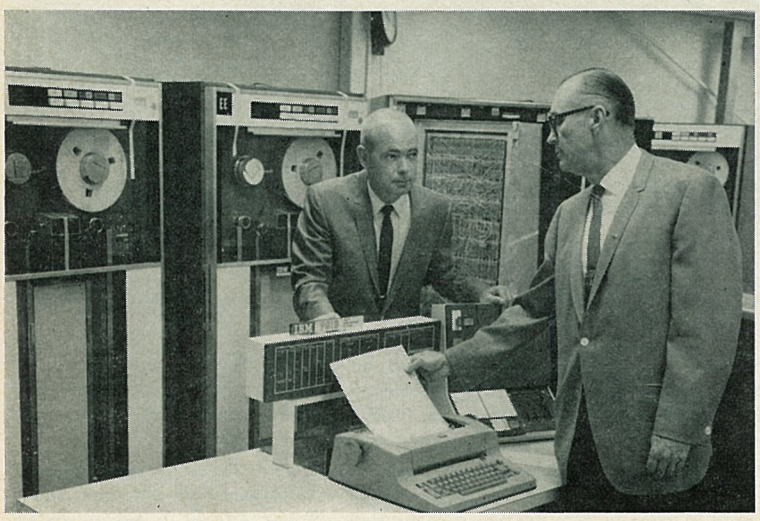
An auction will be held and refreshments served.

Tickets to Charger Games Go on Sale

Season tickets to the Charger home games in the new San Diego Stadium are on sale at the CRA Clubhouse. Prices for 10 games (3 exhibitions and 7 league games) are $45 for $4.50 seats or $60 for $6 seats. All are in choice locations and will be sold on a first-come basis. They are on sale at the CRA Clubhouse, Convair employe services outlets at Lindbergh Field and Kearny Mesa, and Electronics-SD employe services, Bldg. 51, LF.

COUNCIL ELECTS HELEN MADDOX

Helen Maddox, accounting technician in Convair industrial accounting, has been elected treasurer of Toastmistress Clubs Council 7 of Golden Desert Region. Council 7 includes Toastmistress Clubs in San Diego. Helen is a charter member and past president of Serra Mesa Toastmistress Club.



COMPUTER'S SWAN SONG—Last printout from IBM 7010 computer before its retirement from Convair service is checked by George Jacob, left, chief of data processing operations, and G. O. Withem, chief of data systems.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Aug. 15. Call ext. 1071 LF or ext. 3322 KM.)

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ADVENTURERS — Meeting Aug. 16, 7:30 p.m., CRA Clubhouse. Six day back-pack trip in High Sierra Aug. 21-26. Call Joe Quijada, ext. 2746 KM.

ARCHERY — Club shoot Aug. 20, 1 p.m., CRA range.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg. Balboa Park.

BICYCLE CLUB — 50 or 100-mile ride in San Diego County Aug. 12. Meet at Muni Gym, Balboa Park, 7:30 a.m.

BONAIR FLYERS — Fly-in to Catalina Island Aug. 27. Call Lyle Wood, ext. 3210 KM.

BOWLING — Sign up now for winter leagues. Call ext. 1111 KM.

BRIDGE — Play each Friday, 7:30 p.m., CRA Clubhouse.

CAMERA CLUB — Meeting Aug. 20, 8 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS — Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS — Meeting Aug. 16, 8 p.m., Convair cafeteria, Lindbergh Field.

DELTA DIVERS — Meeting tonight, Aug. 9, 7:30 p.m., CRA Clubhouse.

FENCING — Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB — Potluck and meeting Aug. 15.

GOLF — Sign up through Friday, Aug. 11, for Aug. 19-20 tourney at Whispering Palms. Call ext. 1111 KM.

ICE SKATING — Skating for GD families every Thursday, 6:15-7:45 p.m., Mission Valley Ice Arena.

PISTOL CLUB — Club shoot Aug. 13, 9:15 a.m., SD Police Pistol Range.

RADIO CLUB — Meeting Aug. 17, 7:30 p.m., CRA Clubhouse.

RIDING CLUB — Meeting tonight, Aug. 9, 7:30 p.m., CRA Clubhouse. Two-day show Aug. 19-20, CRA horse ring.

RIFLE CLUB — Senior shoot tonight, Aug. 9, 7:30 p.m. Junior shoot Saturday, Aug. 19, 8 a.m., Gillespie Field range.

ROLLER SKATING — Free General Dynamics skate night Aug. 21 at Skateland, Front and G Sts. Tickets at employe services outlets.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SPORTS CAR CLUB — Meeting tonight, Aug. 9, 7:30 p.m., Convair executive dining room, LF.

SQUARE DANCING — Dynamic Eights dance Thursdays, 8-10 p.m., CRA Clubhouse. New beginners class begins Sept. 12.

STAMP CLUB—Reorganization meeting tomorrow (Aug. 10), 7:30 p.m., Room A, CRA Clubhouse.

SWIMMING — Family swim night Aug. 19, 7-9 p.m., Mission Beach Plunge. Free tickets at employe services outlets.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TRAILERS — CRA Travelers weekend outing at Pine Crest Aug. 18-20. Call Virg Marshall, ext. 744 LF.

TROPICAL FISH — Meeting Aug. 14, 7:30 p.m., CRA Clubhouse.

WIVES — Luncheon Aug. 16, Top of the Tower Restaurant. For reservations call 274-2503, 264-1013, or 278-1942 by Monday, Aug. 14. Potluck and craft session Aug. 23, CRA Clubhouse.

WOMEN'S GOLF — Tourney Aug. 12, Cottonwood. Tee off at 8 a.m.

PHOTOS OF "OLDIES"—Convair's Hank Arnold spreads out few of his pictures of old planes, many taken by him over last 20 years. As historian for Antique Airplane Assn., he has more than 5,000 prints in his collection.

CRA Mountain Resort Beckons to Campers

There's still lots of room for campers and picnickers at Pine Crest, Convair's own mountain resort three miles east of Julian on Hwy. 79.

Jack Clendenon, park manager, said that around 500 people can be accommodated for overnight camping. Average turnout for a weekend so far this summer has been 100 campers.

There are 60 camping sites in the developed area and 30 more being leveled. Each site is near running water and has its own individual barbecue grill and picnic table and benches under the trees.

All are conveniently located to restrooms and circle the recreation area and children's playground. Ping pong, horseshoes, volleyball, badminton are constantly in play and the younger set makes full use of the softball diamond and playground with its swings, teeter-totters, slides.

Trails are cut through the 87-acre CRA-owned area and organized hikes are held every Saturday. Songfests to guitar accompaniment around the campfire draw capacity crowds each Saturday evening, with the children toasting marshmallows and popping corn over the coals.

Convair campers and picnickers are admitted to the campground by showing their ID cards upon registration with Clendenon. There is no charge for picnicking. Only fee for overnight camping is $1 a night per family. Charcoal and soft drinks may be purchased at the grounds.

Campers or trailers may be parked free throughout the week on the parking lot.

For more information call CRA Headquarters, ext. 1111, Kearny Mesa.

Bonair Flyers Plan Flight to Catalina

Bonair Flyers will fly to Catalina Island for the day Sunday, Aug. 27.

They plan to arrive at the Catalina airport between 10 and 11 a.m. and spend the day sightseeing in Avalon. Planes will fly back to San Diego later the same day.

Anyone wishing to join the flight, either as pilot or passenger, may call Lyle Wood, ext. 3210 KM, for information or reservations. Cost of the trip will depend on the type of plane and number of passengers in the plane.

Seven of the CRA flying group flew to Lake Havasu in three planes for the weekend of July 29-30.

Sales of Circus Tickets Continue

Reduced-price tickets to the Ringling Bros. and Barnum & Bailey Circus are still on sale at General Dynamics employe services outlets.

The tickets, at a dollar off regular adult prices, are $3 and $2 for the Aug. 20 performance at 6 p.m. in the San Diego International Sports Arena.

They may be purchased at CRA Clubhouse, Kearny Mesa and Lindbergh Field employe services, and Electronics-SD and Stromberg-Carlson employe services offices.

Europe Travelers Will Get Briefing

General Dynamics people planning to join the European tours next month will meet Wednesday, Aug. 16, at 7:30 p.m. in Room C of the CRA Clubhouse for further briefing. Following group discussion, refreshments will be served and door prizes given.

Departure date for two 22-day tours is Sept. 30. One by bus is $795 per person and the other, by air, is $859.

Call Inez at ext. 1111 KM for information.

Stamp Collectors Plan to Reorganize

CRA Stamp Club will reorganize tomorrow night (Aug. 10), 7:30 p.m., Room A, CRA Clubhouse, Commissioner Art King announced.

All former members and interested GD stamp collectors are urged to attend.

Meetings will be held on second and fourth Thursdays. The meeting on the second Thursday of the month will be a trading session; an auction will be held the fourth Thursday. Movies and slides also will be shown when available.

Stamp catalogues may be checked out at the meetings for two weeks.

Call King at ext. 3451 KM for further details.

'Figure 8' Bicycle Ride Set For Sat.

CRA bicyclists will make a "figure 8" ride Saturday, Aug. 12, with riders having a choice of making one or both of the two 50-mile loops.

Cyclists will gather at the municipal gymnasium in Balboa Park at 7:30 a.m. The morning loop will be toward Lakeside along old Mission Gorge Road. The afternoon loop will be down the Silver Strand and return. C. C. Campbell will lead.

Scenic "Sunday shortrides" are continuing each weekend with cyclists gathering at 2 p.m. Sundays at the Islandia Hotel parking lot on Mission Bay.

Tickets Go On Sale For Charger Opener

Tickets for the opening Charger game in the new San Diego Stadium Sunday, Aug. 20, go on sale next Monday at all employe services outlets at Convair, Electronics, and Stromberg-Carlson.

Chargers will meet the Detroit Lions in the kick-off game.

Price for seats is either $6 or $4.50. Tickets will be sold on a first-come basis.

A Trip to Edwards AFB by Camera . . .

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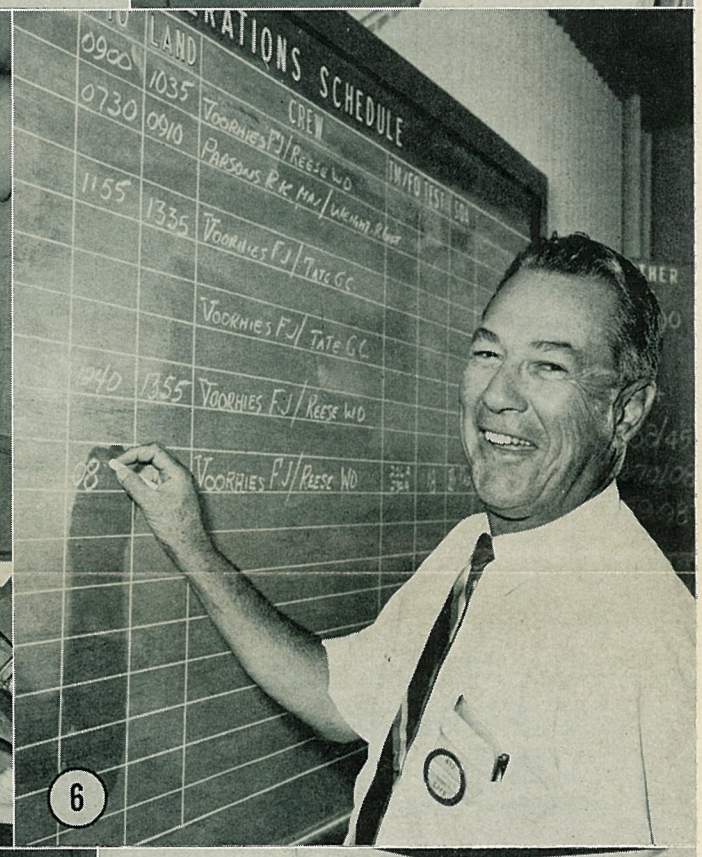

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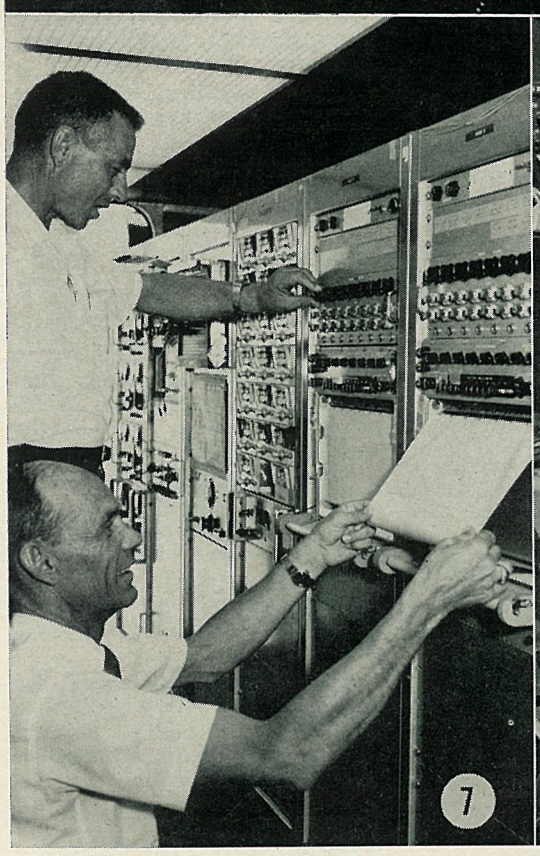

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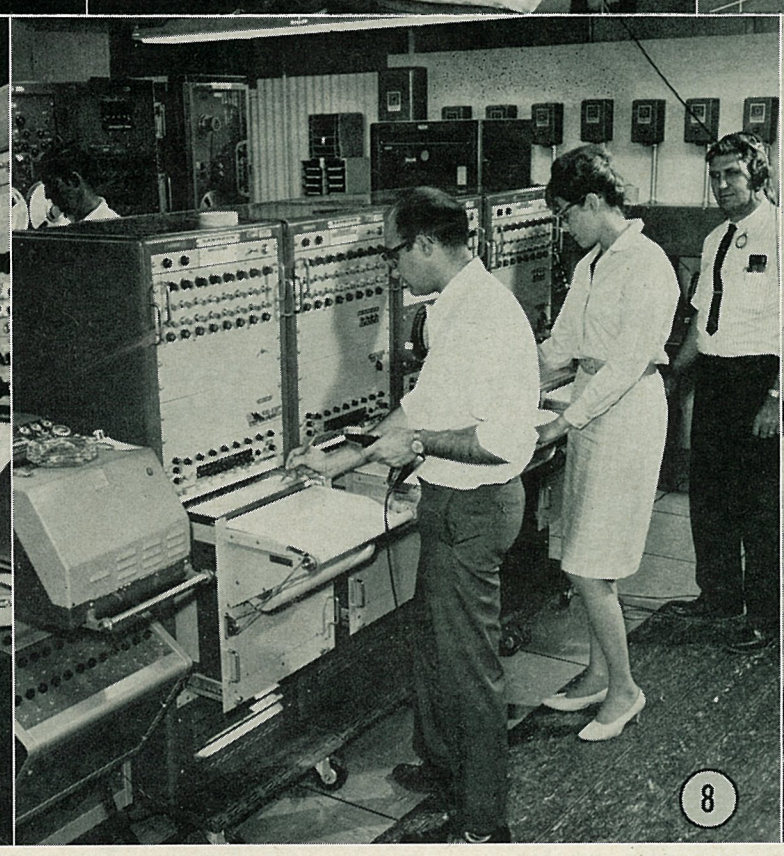

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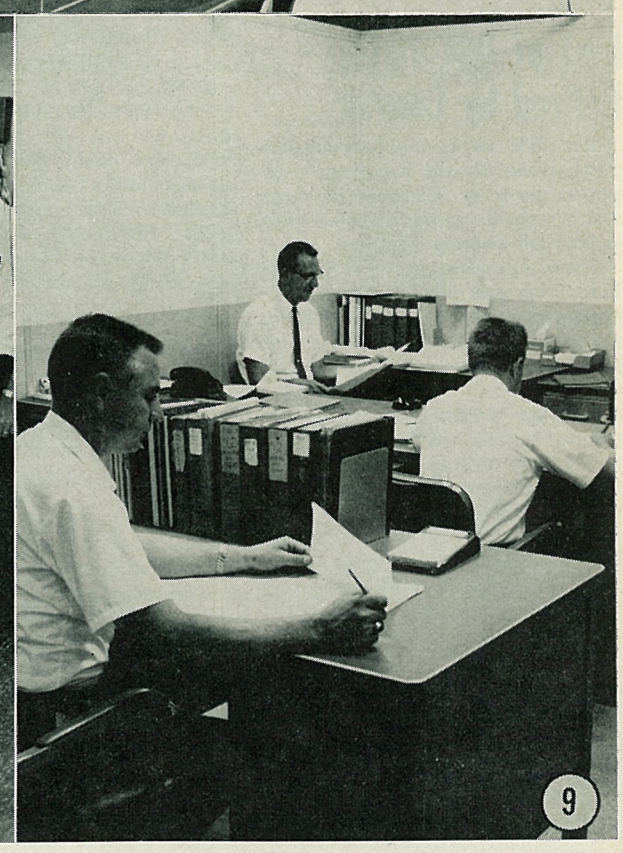

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No. 1—Entrance to Fort Worth division's F-111 flight test facility along "contractor's row" at the Air Force Flight Test Center, Edwards AFB, Calif., desert base northeast of Los Angeles. Over 250 administrative, engineering, maintenance, logistics support, quality assurance, and flight personnel are based at the Edwards facility during flight testing of F-111s, now in third year. Rose Cuthill, secretary, passes through gate at end of day's shift. Guards on duty are Ted Wybierala and George McPherson.

No. 2—Administering Fort Worth facility at Edwards are, from left, V. L. Allwardt, base manager, and his staff: L. M. Failor, chief of base industrial relations; M. G. Grace, chief of quality assurance; R. W. Dodd, chief of maintenance; J. D. McMahan, chief of logistics; F. J. Voorhies Jr., engineering test pilot; F. N. Smith, chief of flight test; Grover C. Tate, public relations; R. R. Lenton, chief of administrative services.

No. 3—Ada Jumper, industrial security identification clerk, checks in O. M. Dixon, rehire, in facility's industrial relations area, just inside building's front door where all visitors and applicants are greeted. In background, Larry Failor (far right), chief of base industrial relations, looks over Fort Worth edition of GD/NEWS with Jean Sterling, administrative clerk, and Don N. Harris, security officer.

No. 4—Anne Roby fronts for Base Manager Vic Allwardt as secretary. Her husband is a lieutenant in the Air Force stationed at Edwards.

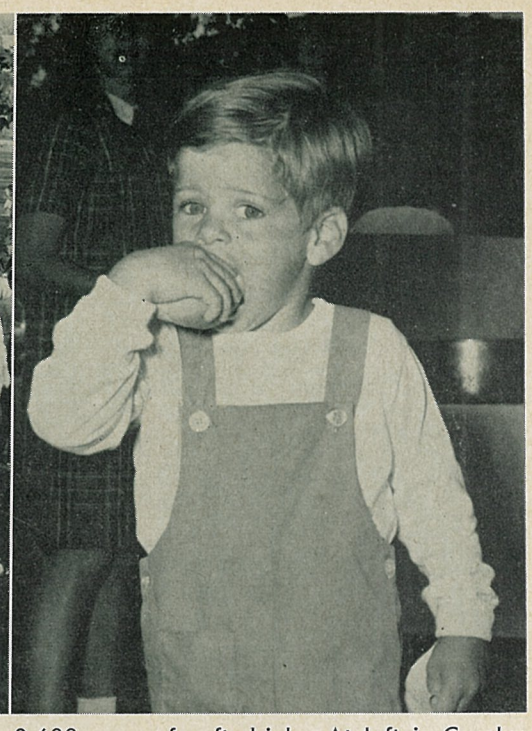
No. 5—Audrey Smith (left) is keypunch operator in facility's busy TWX room. Evelyn Johnson, at right, is facility's cashier but fills in for Barbara Seaman, regular TWX operator, when necessary.

No. 6—Paul LaFrenier is in charge of flight operations, scheduling takeoffs and landings; coordinating with Air Force and other companies using runway.

No. 7—Garland Looney, lead instrumentation engineer, adjusts strip chart recorder and B. B. Lambert, instrumentation engineer, loads chart paper in Telemetry Van where radio real time telemetry signals are received and displayed on charts during test flight. Air speed, altitude, and other parameters are recorded on magnetic tape as a backup to tapes recorded on F-111s.

No. 8—John Hedges, aerosystems engineer, far right, supervises Edwards Quick Look Center where tapes recorded on F-111s during test flights are played back for instrumentation and flight safety checking. Real time data is taped in data processing center during flutter tests. W. E. Morton, system operator, is at playback console in rear; Dallas Brown, structural engineer, is monitoring, while Joanne Montgomery, data analysis engineer, checks display on strip chart recorder.

No. 9—Instrumentation engineers G. R. Looney, Dick Housekeeper, Ken Mason at work.—Photos by Fort Worth division photographer Charles Connally.



QUITE A NIGHT—Convair Management Club's Sports Night at Westgate Park drew more than 2,000. They consumed 2,600 lbs. of barbecued beef, 1,000 lbs. of ham, 650 lbs. of potato salad, 2,600 cups of soft drinks. At left is Carolyn Dubel with loaded plate. At right Karl Becker stretches wide for bite of roll.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 17 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, August 23, 1967

In photo at left, Ray Lange whirls barrel before Edith Ratz pulls winning tickets at Management Club Sports Night. Duke Rogers, general chairman for sponsoring material department, is at mike and Eddie Cash, "scorekeeper," is in background. In photo at right, Harvey Moose, director of material (center), poses with top prize winners: Frank Lucas, Larry St. John (ETR), Grace Deming, Arlene Pierce. Lucas won a trip to Las Vegas, St. John one to San Francisco, Mrs. Deming, also one to Las Vegas. Mrs. Pierce drew grand prize, trip to Mexico City and Acapulco. Raffle raised over $1,000 for club scholarship fund.

Division Earns Praise For FACI Performance

Convair division has received a letter of appreciation from Col. Leo W. Sullivan, Air Force Space and Missile Systems Organization deputy for launch vehicles, for performance in the first article configuration inspection (FACI) for the new Atlas SLV-3A vehicle July 27 and 28.

"I wish to express my appreciation for presenting the first SLV-3A space launch vehicle (5602) for first article configuration inspection on schedule and in such excellent condition," Colonel Sullivan wrote in the letter to Jack L. Bowers, Convair general manager.

"The FACI review team of approximately 100 National Aeronautics and Space Administration, Space and Missile Systems Organization, Aerospace, Defense Contract Administration Services Plant Representative office (DCASPRO), and Convair personnel were unable to detect any significant discrepancy during their two day inspection."

Colonel Sullivan said the success of the FACI can be attributed to "the outstanding professional leadership, guidance and ability" of Grant Hansen, vice president and program manager-launch vehicle programs, and Richard Keehn, Atlas SLV program office manager, and to "hard work and cooperation" of the Convair FACI team members.

He noted that the FACI team members, in conjunction with DCASPRO, conducted the configuration verification inspection during the sixth month period preceding the FACI.

"This type of professional excellence and teamwork is the essential element in any successful space program and reflects most favorably on each individual and on Convair," Colonel Sullivan wrote. "Our thanks for a job well done."

Ice Follies Tickets Start on Sale Today

Tickets for a special performance of the world premier of Shipstads and Johnson's 1968 Ice Follies go on sale today (Aug. 23) at reduced prices for General Dynamics people.

Convair Recreation Association has purchased a block of 2,000 choice seats for the Sunday, Sept. 10, 6 p.m. showing at the San Diego International Sports Arena.

Discount price to GD purchasers is $1 off regular rates of $4.50, $4, and $3.50. Tickets will be sold on a first-come basis at employe services outlets and the CRA Clubhouse.

Salvage Schedule

Next employe's sales day at Convair's salvage yard, Lindbergh Field plant, adjacent to Gate 5, will be Sept. 16, 8 a.m. until noon.

New Era Begins For the Atlas

Convair division marked the end of an era last week when its 56th and last Atlas SLV-3 space booster rolled off the assembly line in San Diego.

A new era for the reliable Atlas already had begun with production of two new uprated and more advanced versions — the Atlas SLV-3A and Atlas SLV-3C — to succeed the SLV-3 as boosters for advanced Air Force and NASA space missions.

The last of the SLV-3s, No. 5103, was to be shipped to the Eastern Test Range (ETR) this week for use later this year as booster for launch of NASA's Applications Technology Satellite-C.

As SLV-3 No. 5103 was low-

(Continued on Page 6)

First Flight Success For Bomber Version

First development model of the FB-111A strategic bomber made a successful first flight from Fort Worth division July 30.

Val Prahl, manager of flight, and Max Runyan, flight test engineer, were at the helm during the 45-minute mission.

Convair division is building the external fuel tanks and pylons, as well as electronics bays for the FB-111 version.

First fuel tank pylons went out of San Diego plant the latter part of June while the first 600-gal. fuel tank was due to be shipped this month. First FB-111 electronics bay was delivered the last of June.

The flight included routine operation of the plane's sweep-wing and about eight minutes of supersonic flight.

"We were pleased with the results of the first flight," said R. J. Patton, FB-111A program director. "No major discrepancies were reported."

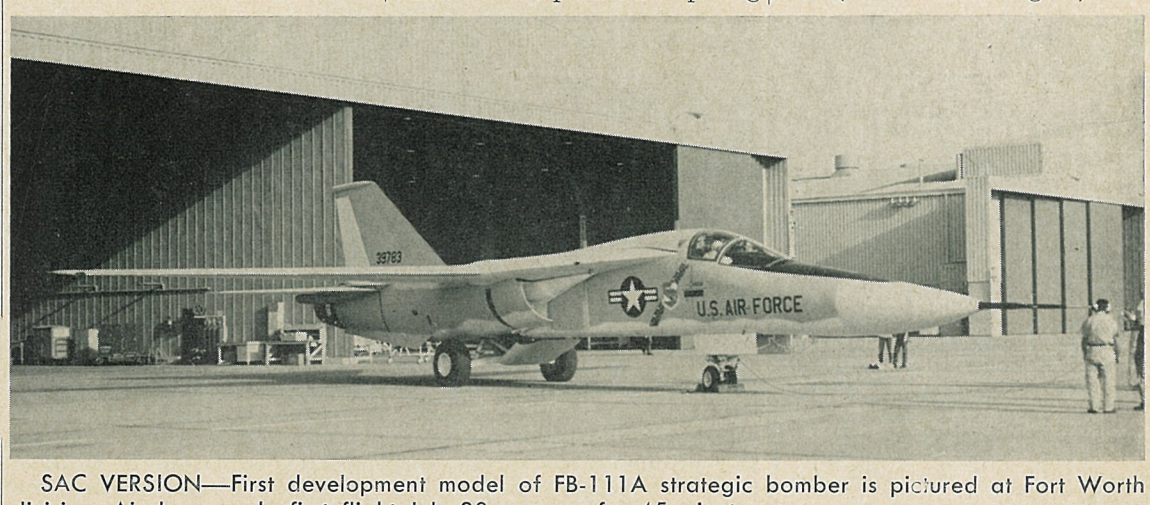
Patton said the airplane — No. 18 in the production sequence— would undergo intensive structural testing from Fort Worth in the months ahead.

"The testing should move rapidly," he said, "since we can use most of the data gained from the regular F-111A and F-111B flight test program.

"Most of the testing on this version will be on added features, mainly stores and tanks which add to the airplane's range."

The FB-111A is almost identi-

(Continued on Page 2)



SAC VERSION—First development model of FB-111A strategic bomber is pictured at Fort Worth division. Airplane made first flight July 30, was up for 45 minutes.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Aug. 15 and Aug. 31:

Thirty-year: Dept. 027, L. C. Hare; 951, W. O. Blakesley.

Twenty-five-year: Dept. 002, O. D. Phillips; 041, J. T. Halfacre, F. H. Kleckner, F. J. Vigliaturo; 130, J. H. Cooper; 400, D. B. Campbell; 515, Betty A. Valin; 531, W. D. Mitchell; 545, G. C. French; 756, C. W. Zagami; 761, L. M. Hernandez.

Twenty-year: Dept. 059, Edna P. Hise, Carrol S. Lunsford; 130, J. M. Aguilar; 400, E. E. Buschbaum; 451, G. M. Cesena; 460, Virginia C. Morrison; 519, Gladys B. Isom; 526, H. E. Mayer; 761, A. L. Brady; 978, H. L. Collins; 985, H. F. Clemens.

Fifteen-year: Dept. 015, Doris P. Wallace; 143, Marie J. Russell; 144, R. C. McCarty; 195, F. E. Buckles; 250, R. M. Meekin, G. C. Tsaousis; 403, H. F. Hudson; 460, J. R. Ahrens; 514, M. L. Clayton; 532, O. B. Harder; 565, V. C. Caldwell; 587, A. J. Johnson; 756, D. R. Dayharsh; 979, J. E. Robinson.

Ten-year: Dept. 002, W. F. Bishop, H. D. Richetti; 110, Joyce M. Wilfert; 113, Elaine R. Shields; 130, A. W. Peck; 146, G. M. Pearce; 149, M. H. Nelson; 202, E. L. Wright; 250, Alice E. Baronian, W. J. Malloy; 400, W. G. Hough; 401, W. H. Gavin; 420, N. E. Morse; 517, B. S. Brockett; 521, R. W. Moore, Juanita M. Schlife; 524, C. J. Alexander; 526, W. V. Taylor; 565, Arlene A. Bernard; 580, G. D. Schmidt; 581, F. E. Jarlett; 591, F. M. Chadwick.

Dept. 717, G. K. Ireland; 744, A. Meekins; 780, H. D. Akers; 820, Genevieve W. Cook; 833, M. W. Snider; 840, G. G. Fields Jr.; 951, J. K. Heldenbrand; 967, K. Catlin; 979, K. N. Bracklin, S. E. Buck, B. Goodwin, G. E. Kelley, K. N. McCarty, T. F. McNulty, D. J. Merritt, R. O. Walters; 985, P. Garcia; 988, E. C. Agbulos, R. C. Scarborough.

ELECTRONICS

Twenty-five year: Dept. 713, J. M. Green.

Twenty-year: Dept. 713, R. L. Frizzell.

Fifteen-year: Dept. 422, H. G. Tunks; 423, P. Thomas; 425, H. G. Dietrich.

Ten-year: Dept. 103, Patricia L. Bernard, D. H. Jackson; 713, W. J. Connors, R. D. Osterhoudt; 811, E. E. Brundege.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Aug. 4.

Dept. 001-0, W. J. Gramse (two awards), W. W. McDaniel, H. G. Mondy; 015-0, S. Brown; 016-0, L. W. Barbour (two awards); 027-0, P. W. Byrd, J. E. Conklin, G. R. Simpson; 059-8, P. R. Carlton Jr.; 130-8, B. J. Jones; 140-1, C. L. Amaral, F. Lay; 143-1, M. E. Howell (two awards); 143-3, D. M. Smith; 144-1, W. L. Burkhalter, L. E. Campbell, W. G. Lux (two awards), E. H. Smith; 144-2, R. F. Luth; 149-0, B. J. Moore; 149-2, J. Ratajkowski; 193-3, R. C. Firestine; 250-2, B. L. Keim; 401-5, M. E. Colvin; 401-6, L. M. Lindsey; 572-3, F. J. Phillips; 715-0, J. Friel (two awards), C. E. Schultz, H. J. Wallendorff; 733-0, T. L. Duenez; 759-0, G. W. Stacy Jr., P. P. Standley; 761-0, S. L. Cowley, P. E. Grasmick, W. L. McDougal, C. W. Neal, L. L. Ripley (two awards); 763-0, C. M. de la Bretonne, B. K. Williams; 763-1, W. V. Marshall, D. J. Melvin, H. M. Romero, G. Torregrosa; 835-5, J. G. Gonzalez (two awards); 840-2, V. J. Norris; 842-0, G. J. Anderson; 850-0; E. E. Hixson; 860-0, J. H. Harper; 860-1, E. J. Rasp; 979-6, D. V. Cooley; 985-4, D. S. Carpenter; 988-9, T. Murray.

Employe Suggestion awards approved for the week ending Aug. 11.

Dept. 002-0, C. O. Owens; 015-0, A. E. McFarland; 027-0, P. W. Byrd, C. L. McNeal (two awards), J. J. Medina; 031-0, T. Castro; 059-1, B. E. Cavin, W. S. Nader; 101-2, T. S. Wilkins; 130-1, M. J. Chilcote, A. C. Reitmeier; 143-4, J. F. DuBois; 144-1, M. L. Jamison; 144-2, N. J. Belik, G. T. Lizon; 149-6, W. B. Dawson; 149-7, L. A. Brugger; 170-1, L. R. Reardon; 401-0, P. Paszko; 401-5, L. O. Smith; 401-6, L. M. Lindsey; 519-0, C. Greve Jr.; 578-1, H. G. Brittain; 717-0, D. P. Grace, D. G. Jackson; 732-0, R. E. Dykes; 733-0, G. N. Hays, R. W. McBride, R. E. Reeves, H. Staten Jr.; 761-0, S. S. Stearns; 810-1, M. J. Arthur; 840-0, G. F. Anderson; 850-0, E. E. Hixson; 860-0, J. D. Mazzarelli; 979-1, J. E. Coolidge; 979-6, E. A. Ferguson, W. W. Gardenour.

Personals

CONVAIR

I wish to express my thanks and gratitude to all my friends at Convair for their flowers, cards and kind expressions of sympathy during the recent death of my wife, Florence.

Tom J. Dunn
Dept. 016 (retired)

* * *

The family of Anthony P. Trashell gratefully acknowledges your kind expressions of sympathy and concern during this last year and at the time of his death.

Bonnie Trashell and Family

Births

CONVAIR

CHAN—Son, Robert Kenneth, 8 lbs., 2½ oz., born Aug. 7 to Mr. and Mrs. William K. Chan, Dept. 410-0.

FRIEDMAN—Twins, Kenneth, 6 lbs., 3 oz., and Kathryn, 4 lbs., 9 oz., born Aug. 6 to Mr. and Mrs. George R. Friedman, Dept. 585-0.

Papers Presented

CONVAIR

BREVIG—Ola, Dept. 584-1. "A Comparison Between the Ejector Ramjet and the Ducted Rocket." AIAA/Third Propulsion Joint Specialist Conference, Washington, D. C., July 18-22.

HENKEL—R. M. and D. P. MEALEY, Dept. 542-0. "Electromagnetic Compatibility Operational Problems Aboard the Apollo Spacecraft Tracking Ship." IEEE/1967 Symposium on Electromagnetic Compatibility, Washington, D. C., July 18-20.

NEYNABER—R. H., Dept. 596-0. "Merging Beams Study of Symmetric Resonance Charge Transfer in Atomic Hydrogen." Fifth International Conference on the Physics of Electronic and Atomic Collisions, Leningrad, USSR, July 17-23.

PERKINS—C. K., Dept. 967-2. "Liquid Sensors for Zero-G." ISA/IMEKO Fourth International Measurement Congress, Warsaw, Poland, July 3-8.

ROSCOE—R. G., Dept. 146-0. "Economics of Instrument Calibration." ISA/IMEKO Fourth International Measurement Congress, Warsaw, Poland, July 3-8.

ROTHE—E. W., Dept. 596-0. "Velocity Dependence of Total Cross Section for Thermal Energy Atom — Molecule Scattering." Fifth International Conference on the Physics of Electronic and Atomic Collisions, Leningrad, USSR, July 17-23.

WILD—J. M., Dept. 570-0. "Nuclear Propulsion for Aircraft." AIAA/Third Propulsion Joint Specialist Conference, Washington, D. C., July 18-22.

Invention Disclosures

CONVAIR

BRACKA—B. W. and W. D. REEDER, Dept. 580-3. Extensible Aircraft Wing Tip.

BURGESON—J. E., Dept. 511-3 and W. E. MOONEY, Dept. 581-1. Swinging Arm Wing Slat Mechanism.

GELLES—P. E. and D. C. X. GONZALEZ, Dept. 144-2. Semiconductor Holding Fixture.

HANNAY—P. M., Dept. 562-2. Swell Generator.

KERBY—C. M., Dept. 512-2. Re-entry Heat Shield Support Structure.

In-Plant Training

ORIENTATION

NEW EMPLOYES — Educational services staff. Lindbergh Field, ext. 491, Bldg. 14 auditorium, 8 a.m., Tuesday, Sept. 5, for first shift; 4:30 p.m., Tuesday, Sept. 12, for second shift; AF Plant 19, ext. 491, Bldg. 3, 1st mezz., Col. B-14 conference room, 8 a.m., Thursday, Sept. 14; Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Monday, Aug. 28.

PROFESSIONAL/TECHNICAL

HI-TEMPERATURE SOLDERING — Several 16-hr. classes will be conducted on soldering procedures using Sb-5 and Sn-10 covering Convair and Fort Worth specs. Classes will begin in September at Lindbergh Field. For information call Dick Forrest, ext. 1931, Kearny Mesa.

DAMAGE PREVENTION — Kearny Mesa, first shift, Tuesdays and Wednesdays, 8-9 and 10-11 a.m., Sept. 5, 6, 12, 13, Oct. 3, 4. Bldg. 17, Room 8, Lindbergh Field, first shift, Wednesdays and Thursdays, 8-9 and 10-11 a.m., Aug. 30, 31, Sept. 20, 21, 27, 28, Oct. 11, 12, 18, 19, 25, 26, Nov. 1, 2, 8, 9, 15, 16. Bldg. 14 auditorium. For information call W. F. Weidenfeller, ext. 1931 KM.

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Educational service office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Also available are the following management programmed texts: Principles of Management, Basic Supervision of People, How to Conduct a Selection Interview, How to Improve Your Supervisor Skills, Basic Skills in Communications, On-the-Job Training, Cost Reduction and Control for Supervisors, Inventory Management, Effective Interviewing for Supervisors, Improving Your Written Communications, Improving Your Supervisory Error Reduction Skills.

CITY COLLEGE COURSES

Lindbergh Field: Mondays starting on Sept. 11. Introduction to Supervision, 4-7 p.m., Room 8, Bldg. 14. Instructor, Hal Rubin. Registration on first night. For reservations call educational services, ext. 491 LF.

Kearny Mesa: Mondays starting Sept. 11. Industrial Economics for Supervisors, Bldg. 17, Room 1, 4:30-7:30 p.m. Instructor, Donn Olsen. Wednesdays starting Sept. 13. Human Relations "A," Bldg. 17, Room 1, 4:30-7:30 p.m. Instructor, Hal Rubin. Thursdays starting Sept. 14. Introduction to Digital Computers, with emphasis on numbering systems and Boolean algebra. Bldg. 17, Room 2, 5-8 p.m. For information call Dick Forrest, ext. 1931 KM. Registration for all classes at first sessions. For reservations call Diana, educational services, ext. 1931 KM.

Rider-Driver

RIDE WANTED—From Spring Valley, Jamacha Rd. and Elkelton St., to Lindbergh Field plant. 7 a.m.-3:30 p.m. shift. Jim Cooper, Electronics fabrication, Bldg. 72. Home phone 460-3995 after 5 p.m.

RIDE WANTED—From 4582 34th St., North Park, to Kearny Mesa; 7:30 to 4:15 shift. Phone Verda Gould, ext. 1252 KM or (home) 282-2303.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N.Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

First Flight Success For Bomber Version

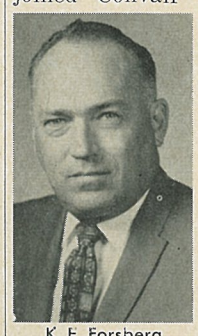
(Continued from Page 1)

cal in appearance to the F-111A. It has an A-model fuselage; however, it is equipped with the F-111B wing, which extends about seven feet farther than the F-111A's.

Testing on No. 18 will be mainly of a structural nature. The bomber's avionics equipment will be wrung out on another development model next year. The first production bomber for Strategic Air Command is slated to roll off the line in June, 1968.

Forsberg Joins Fox's Staff

Kenneth E. Forsberg, who has held management and engineering positions with Sperry Gyroscope Co. in New York since 1951, has joined Convair division on the staff of W. W. Fox, director of product design.



K. E. Forsberg

Forsberg had served as manager and staff consultant for new programs for Sperry since 1964. He was engineering department head for advanced studies from 1962 to 1964, research section head for advanced radar from 1959 to 1962, a senior engineer from 1955 to 1959 and a project engineer from 1951 to 1955.

During his 16 years with Sperry, Forsberg served as manager for numerous programs including navigational systems, tactical missile systems and space systems requirements studies and served as a consultant on the New York City traffic control system and on the C-5A radar subsystem and manned orbiting laboratory (MOL) guidance and navigation subsystem and phased-array radar systems.

Forsberg received his SBEE degree from Massachusetts Institute of Technology. He also attended the University of Minnesota, and the Yale communications school and Harvard-MIT radar schools while serving in the Army Air Corps, 1943 to 1946.

Electronics, S-C In Bonds Drive

Electronics-San Diego operations and Stromberg-Carlson Data Products will join other General Dynamics divisions in a U. S. Savings Bonds campaign the first part of next month.

The Corporate-wide drive to encourage regular bonds purchase by payroll deduction will run from Sept. 5 through Sept. 13.

Convair division conducted its 1967 drive early this spring, May 16-26, to avoid conflict with other drives. It reached 82 per cent participation.

All Electronics-SD and Data Products people not now participating will be asked to sign, even if only for the minimum of 50 cents a week. Tab cards will be issued to all non-buyers. Only a signature is necessary to begin regular purchase by payroll deduction at each pay period.

Employes also will have an opportunity to sign for the new Freedom Shares which may be purchased only in combination with Series E bonds. Freedom Shares return 4.74 per cent interest in just 4½ years if held to maturity. They must be held a year before they may be redeemed for cash.

Community Grants Of $1,700 Okayed

Grants totaling $1,700 for two community health organizations were approved by the Convair Employes' Con-Trib-Club Committee at its Aug. 10 meeting.

The San Diego area chapter of the National Multiple Sclerosis Society received $1,500 for general operating expenses and its patient service programs. The San Diego County Association for Retarded Children was allocated $200.

Mechanical Arms Designed for Subs

A new manipulator designed to increase the working capabilities of deep-diving research submarines has been developed by Electric Boat division.

Named "Modul Arm," the manipulator is the first to incorporate drills, a cable cutter, and various clamping devices.

Las Vegas Weekend Set For September

A weekend in Las Vegas will be sponsored by CRA the last weekend in September. Chartered bus will carry GD travelers to the Aladdin Hotel along the "strip" for the Sept. 29-Oct. 1 fun trip.

Cost of $36 a person will include round-trip transportation, two meals, two free drinks, and other coupons.

Call Inez at CRA Headquarters, ext. 1111 KM, for information or reservations.

Value Engineers Hear About VAMP Program

Convair division's value analysis of management practices (VAMP) program was described last week at a meeting of the San Diego chapter of the Society of American Value Engineers by Warren J. Ridge of the division's cost reduction and value control staff. Ridge is president of the SAVE chapter.

FISHER WILL CHAIR INSTITUTE PANEL

C. R. Fisher, Stromberg-Carlson Data Products manager of engineering, will be a panel chairman for the Institute of Electrical and Electronics Engineers workshop on "Technology That Will Affect Future Computer Peripherals." The meeting will be Aug. 25-27 at Lake Arrowhead, Calif.

WURTZ APPOINTED TO CONTRACTS POST

Harry S. Wurtz has been named manager of contracts for Convair launch vehicle programs, reporting to Grant L. Hansen, vice president and launch vehicle programs director.

Harry Wurtz

He succeeds T. C. Couington who, after 10 years with Convair and the former Astronautics division, has accepted a new position as manager of contracts for Electronics-San Diego operations.

Wurtz joined the former Astronautics division in 1962 as a material office staff assistant and has been chief of space launch contracts since 1963.

He received his bachelor's degree from New York State College for Teachers in 1944, his master's from Columbia University in 1946 and studied political science and economics at Syracuse University from 1949 to 1951.

Wurtz served as an instructor for Associated Colleges of New York from 1946 to 1949 and as an associate professor and business officer for Wheelock College in Boston from 1951 to 1962.

Naval Reserve School Offers College-Level Course Series

Seventeen college-level courses will be offered during the fall semester by Naval Reserve Officers School 11-2 in San Diego. Employes who are reserve officers in any branch of the armed forces may attend.

Classes will be held at 7 p.m. Thursdays at the USNR Training Center in San Diego and at Coronado Evening High School Wednesdays at Grossmont Evening High School and Tuesdays at Palomar College in San Marcos beginning the first week in September.

General Dynamics employes will be serving as instructors for four of the courses.

LCdr. George T. Schnurer, USNR, a research staff member for General Atomic division, will instruct a course in nuclear power. Cdr. Richard G. Wilson, USNR, a revenue management coordinator in Convair's Dept. 196-0, will teach "systems project management."

Col. Gerald D. Schmidt, USMCR, a program analyst in Convair Dept. 580-2, will instruct a "counter insurgency" course and LCdr. Richard G. Stoklosa, USNR, a senior design engineer in Convair's Dept. 962-5, will teach "program evaluation and review technique (PERT)."

Other courses offered will be "leadership," "security of classified information," "oceanography," "elementary principles of digital data systems," "communications," "advanced anti-submarine warfare," "orientation to command," "international law," "naval intelligence" and meteorology."

Additional information can be obtained by phoning YN1 John Scott, 255-5117.

Cdr. Ross A. Evans, USNR, manager of personnel administration for Convair, is extension coordinator for the school and LCdr. E. W. Thurston Jr., USNR, an educational specialist in Convair's Dept. 130-3, is in charge of public affairs and recruiting.

Five Ten-Week Courses Slated Under Mgt. Club Sponsorship

Convair Management Club plans to offer 12 five- to 10-week educational courses beginning the week of Sept. 22, W. F. Chana, chairman of the club's management development committee, announced.

Chana said courses were those most desired by more than 500 club members who returned recent questionnaires.

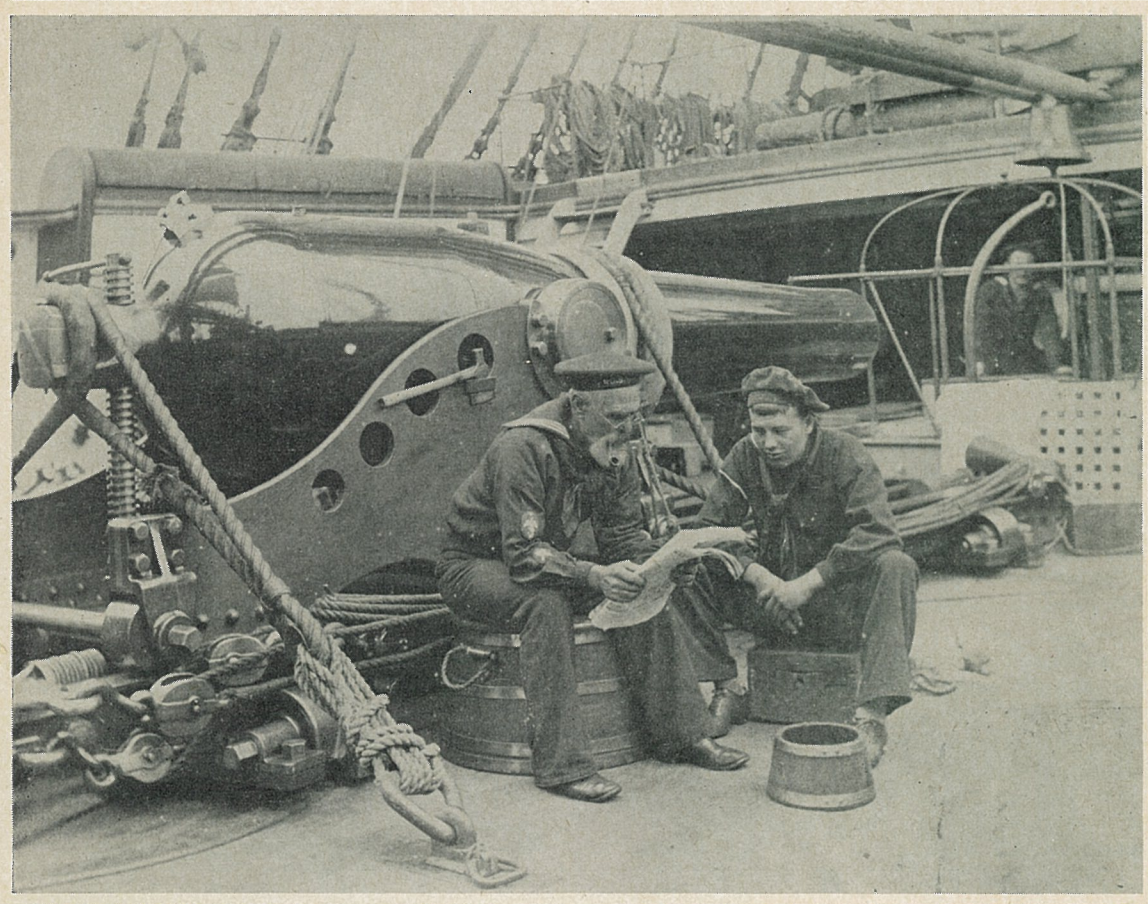
Three "principles of managing" courses are being planned—one designed for technical and professional personnel, one for non-technical personnel and one using audio-visual techniques.

Two special series of presentations—one on Convair product lines and one on division departments—are scheduled. Each will include presentations by about 10 key division personnel.

Other courses will include "challenges for management," "marketing and salesmanship" (a film series); "effective writing," "modern memory methods," "introduction to data processing at Convair," "systems engineering management" and "a new wave in management mathematics."

Tony Calman and Jack Hurt are in charge of the club's self development programs subcommittee which is planning the courses.

TERRITORY TRIBUTE — Arnold Senterfitt, Convair senior design engineer, displays scroll presented by governor of Territory of Baja California. Book on airports and topographical map of Baja California produced by Senterfitt is being used by tourist pilots.



"OLD NAVY"—First class gunner's mate and apprentice take a break aboard Civil War period transport. Behind them is muzzle loader cannon, probably a "Dahlgren" typical of ordnance of that day. (Photo by courtesy of Adm. Richard H. Jackson of Coronado, Calif. At 101, he is Navy's oldest living flag officer.)

Pomona Division Missile on Display As Navy Command Observes 'Birthday'

The Naval Ordnance Systems Command is observing its 125th anniversary this month. In connection with the anniversary, exhibits are on display in the lobby of the Munitions Building at Washington, D.C. Among them is a full scale model of a Standard Missile (medium range) under production at Pomona division.

It was on Aug. 31, 1842, that President Tyler signed into law the legislation establishing the Navy Bureau of Ordnance and Hydrography—the forerunner to Naval Ordnance Systems Command.

By law the first Bureau of Ordnance consisted of one Captain who was Chief of the Bureau, at a salary of $3,000 per annum; one clerk and three draftsmen. Today the Washington staff of the Commander, RAdm. A. R. Gralla, consists of approximately 150 officers and 1,000 civilians. Throughout the Command, 44,000 people are employed.

The first Chief of the Bureau of Ordnance was Commodore William Montgomery Crane, for whom the Naval Ammunition Depot at Crane, Ind., is named. A most significant and tragic event during his tour of duty probably tended to establish and justify the position of the Bureau of Ordnance as a major force in the Navy structure, which position it still maintains.

In 1844, a large ship's gun, designed by Ericsson, (later inventor of the Monitor of Civil War fame), and opposed by Crane, but approved by President Tyler, blew up under tragic and dramatic circumstances. The gun was an extremely large (12 inch) ship's cannon. It was made of wrought iron and known as the "Peacemaker." It was demonstrated off Alexandria, Va., on board the USS Princeton, a steam auxiliary. Present during the demonstration were the President of the United States (Tyler), the Secretaries of Navy and State and several other high ranking officials. The gun blew asunder on the third shot and killed the Secretaries of Navy and State and several others.

This tragic event was not only the beginning of new safety precautions, but since that time the Bureau of Ordnance or its successors, have been doing the designing, building and/or purchasing of guns and other ordnance under their specifications for the Navy.

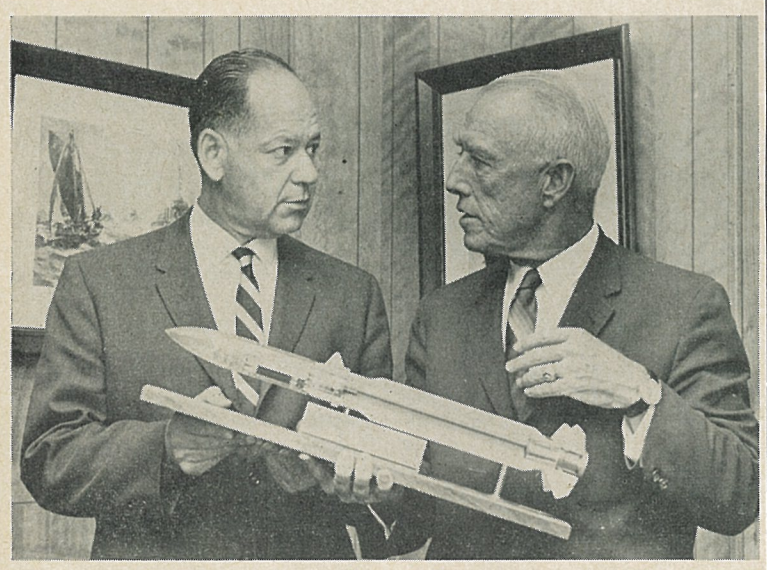
In 1862, the Bureau of Ordnance and Hydrography was changed to the Bureau of Ordnance. This change lasted until 1959 when Ordnance was joined with the Bureau of Aeronautics to become the Bureau of Naval Weapons. From this latter Bureau, on May 1, 1966, emerged the present Naval Ordnance Systems Command.

Gemini 8's Agena At End of Career

Gemini 8's Agena target vehicle, launched March 16, 1966, by Convair's Atlas SLV-3 No. 5302, was scheduled to end its space career last week with a flaming plunge into the earth's atmosphere.

The 26-foot-long Agena, which had been the final earth-orbiting remnant of the Gemini program, had circled the earth more than 8,200 times and traveled more than 200 million miles since the Atlas lifted it into space from Complex 14 at Cape Kennedy.

It was used both as a rendezvous and docking vehicle in the Gemini 8 mission and in the first dual rendezvous of vehicles in space in the Gemini 10 mission.



ANNIVERSARY—RAdm. Arthur Gralla, commander, Naval Ordnance Systems Command, left, confers with C. F. Horne, Pomona division president, while holding model of Standard Missile (medium range). Command is observing 125th anniversary.

Determined

Even the Army Will Give up If You Badger 'em Enough

Robert C. Daly stands up for every little man.

He is 4 ft. 10 in., a characteristic inherited from his Convair father, and isn't much taller outfitted with combat boots and topped off with a steel helmet.

(His father is Robert G. Daly, 5 ft. 1 in., who "stands tall" as manager of operations at Convair's Kearny Mesa plant.)

Among many Army regulations is one requiring that soldiers be at least 5 feet tall.

Young Daly, after being turned down by the Marines for physical stature, enrolled as a freshman at Colorado State College and began badgering the Army for a height waiver.

His plea was indicative of his philosophy of life: "Four feet 10 inches seems too small for just about anything sometimes," he said. "However, somewhere inside of me there's some spark that says drive harder than anyone else."

Young Daly got his waiver and, believed to be the Army's smallest soldier, was dubbed "short round" during basic training at Fort Bliss, Texas.

"He's got a lot of determination," Sgt. G. M. Sugarman, his basic training instructor, said.

(That quality earlier resulted in his being student body president at Evergreen, Colo., High School and the school's 95-pound-class wrestling champ.)

"Basic training was rough," he concedes. "But I don't expect any difficulty. My father was a Marine and made it just fine."

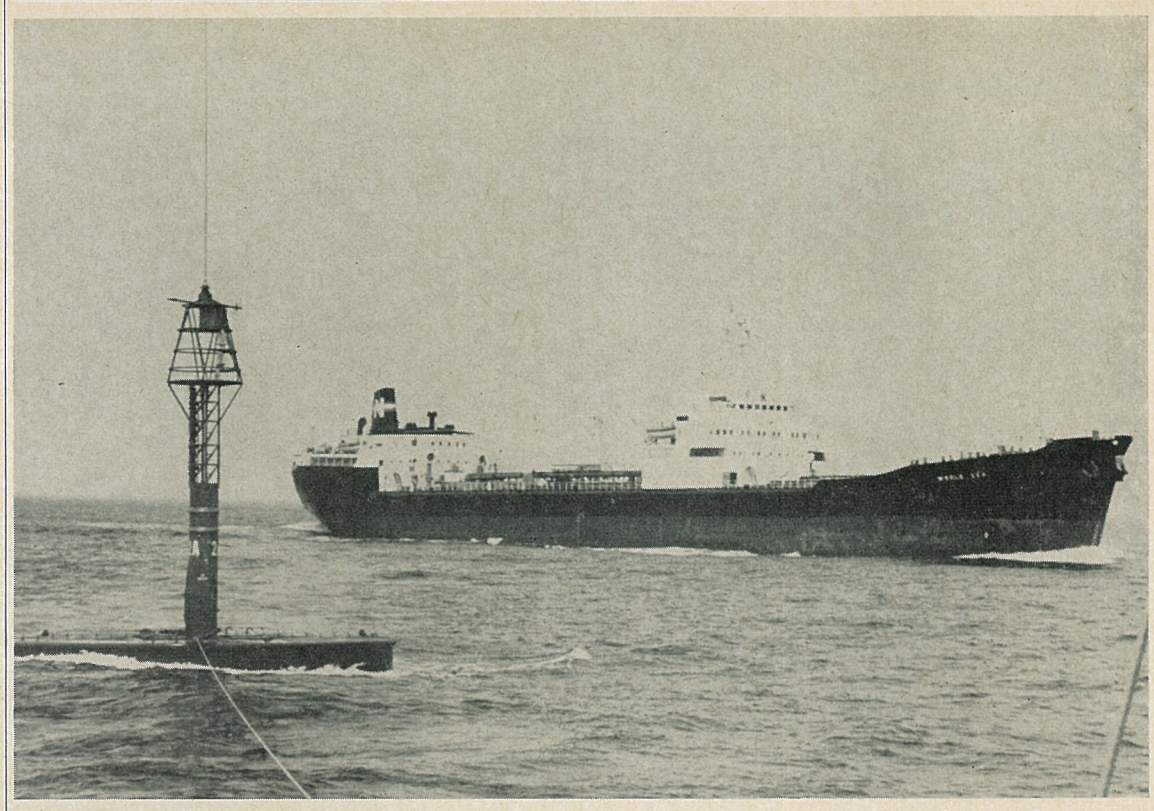
Young Daly, 19 last month, is completing advanced infantry training at Fort Ord, Calif. and he's been granted a second height waiver for the Army's officer candidate school!

FOLLOW ME—Pvt. Robert C. Daly, Convair son, 4 ft. 10 in., stands at attention in front of his buddy, Pvt. Walter G. Windsor, 6 ft. 6.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Labor Day to Mean Three-Day Weekend

General Dynamics people will have a three-day weekend over the Labor Day holiday. Monday, Sept. 4, will be a legal holiday throughout the entire country. All divisions will be closed with the exception of necessary maintenance and security functions.



ON LOCATION—Coast Guard's large buoy, developed by Convair, was towed to station at approach to New York harbor end of last month. Buoy was towed to location off Sandy Hook, N.J., by Coast Guard cutter, Firebush, at end of towing line in foreground. At time photo was taken large tanker was passing in background.

Coast Guard's Sea Buoy Is on Station; Takes Over Function of Lightship

The large sea buoy developed by Convair division for the U.S. Coast Guard is now on station just south of the entrance to New York harbor and is fulfilling its purpose as an aid to navigation.

Reports to Convair's ocean data station program office at San Diego indicate that the buoy is operating satisfactorily in every respect, D. B. Dewey Jr., Coast Guard buoy project manager, said.

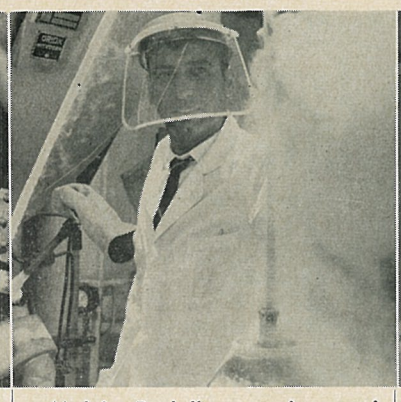
The 50-ton buoy was moored a few miles off Sandy Hook, N.J., at the point known on navigational maps as Scotland Light Station, on July 25. It is located at the same site and will perform the aids to navigation functions of the former Scotland Lightship.

The buoy was delivered to the Coast Guard the latter part of May, three weeks ahead of schedule, at Groton, Conn., where the hull was fabricated by Electric Boat division.

The basic buoy was towed by the Coast Guard cutter to Sandy Hook June 5. It was tied up at the Coast Guard station there while the shore station facility was readied for operation. During this period F. G. Brickson and Don K. Hall, Convair engineers, trained Coast Guard personnel in buoy handling, maintenance, and operation.

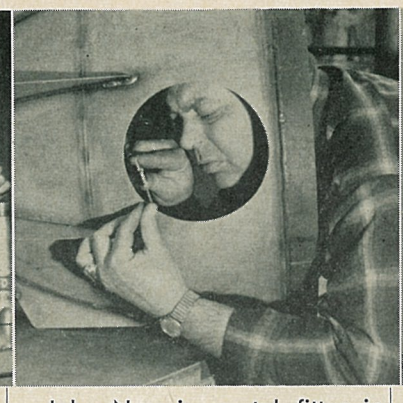
This fall the buoy will be retrieved for installation of oceanographic and meteorological systems which will give the buoy data-gathering capabilities. Convair engineers and technicians will install the instrumentation in both the buoy and the New Jersey shore station.

William B. Voosen, a missile checkout mechanic in Dept. 763-0 at Kearny Mesa plant, has been with Convair since 1935. During the first 20 years he worked on aircraft programs, including duties as a flight line mechanic. Since 1955 he has been with missile programs, starting as an assembler. He is pictured after capping an engine pump outlet following pneumatic tests on Centaur which will be used in the Atlas-Centaur 15 mission. He lives near Lemon Grove, has a son and a daughter, and likes to attend the auto races.

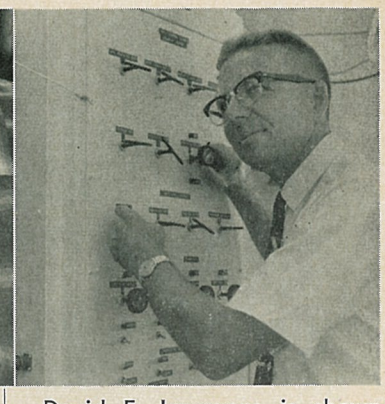


Melvin Podell, a senior engineering chemist in materials and processes' chemical lab at Kearny Mesa, is shown filling Dewar container with liquid nitrogen from 250,000-cu. ft. storage tank adjacent to Bldg. 4. The liquid nitrogen was used in cooling a mercury diffusion pump. Podell received his bachelor's degree in chemistry in 1949 and his master's in 1953 from the U. of North Carolina. He has been with Convair over 5 years. A bachelor, he lives in Golden Hills, and enjoys swimming, photography, and traveling.

Vi Whitten, tool crib attendant at Lindbergh Field plant, and her husband, Gene, joined Convair at the same time 18 years ago during B-36 days. Since then Vi has been issuing small tools in all cribs at Lindbergh Field and for 10 years at former Plant 2. She says she "loves the work" and could find the stock in her sleep. For several years she was the only woman tool crib attendant at LF. Gene is an assembler in Dept. 002 at the same plant. They own a couple of acres 10 miles east of El Cajon where they raise Arabian horses.



John Nessein, metal fitter in Dept. 717-0 at AF Plant 19, doesn't have a chance, with his wife, Virginia, a trained private detective, though she isn't actively working at her trade now. Nessein started with Convair just over 14 years ago as a hand former. He has made the rounds of all the plants—at former Plant 2 during F-102/106 production, then to Astronautics in 1958 as metal fitter on the Atlas and Centaur launch vehicles. He went back to Lindbergh Field plant in hand forming and a year ago was transferred to Plant 19.



David E. Lawrance is shown operating Pad 1 valve control console in the blockhouse at Convair's high energy propellant Test Site D at Sycamore Canyon. Lawrance has been with Convair 10 years and has been test engineer and safety coordinator at Site D since it opened last year. He received his civil engineering degree from Bucknell U., Lewisburg, Pa., in 1957. He and wife, Marjorie, and three children make their home in Clairemont. He is a member of North Shores Toastmasters and enjoys bowling and photography.

SERVICE ACCOLADE—Lt. Col. G. D. Fairbanks, left, DCAS deputy plant representative at Convair, presents Air Force Institute of Technology certificate of appreciation to Emory W. Thurston Jr., right, for his service as coordinator of Air Force Education with Industry program since 1959. Program is under direction of Ross A. Evans, center, Convair manager of personnel administration.

Institute of Technology Cites Thurston For Service to AF

A certificate of appreciation from the Air Force Institute of Technology has been presented to Emory W. Thurston Jr. in recognition of his services as Convair division coordinator for the Institute-sponsored Education with Industry program since 1959.

Thirty-six Air Force officers have completed the 10-month program at Convair during the nine years Thurston has served as coordinator on a part-time basis. The program is under the direction of Ross A. Evans, Convair manager of personnel administration.

The certificate of appreciation, signed by Maj. Gen. Victor R. Haugen, Institute commandant, cited Thurston for his "assistance and support of an Air Force Institute of Technology-sponsored program as a service to the defense of the United States."

It was presented in behalf of the Institute by Lt. Col. G. D. Fairbanks, Defense Contract Administration Services deputy plant representative at Convair.

An accompanying letter said the Air Force "is deeply grateful" for the time and effort Thurston has devoted to the program.

Part-time duties as coordinator of the program are being rotated within the industrial relations department in keeping with the division's Management Upgrade program.

R. Curtis McKee, a labor relations representative in Dept. 130-7, will begin serving as coordinator when a new group of four Air Force officers enter the program at Convair in September.

"I'm afraid the job calls for a *different* kind of journeyman."

Adventurers Take Vacation Pack Trip

A narrated slide show on the Santa Barbara Channel Islands was presented by Harold Casey, a National Park Service ranger-naturalist, at the CRA Adventurers' meeting last Wednesday.

More than 20 members of the Adventurers and their families are spending this week on a vacation back-pack trip in the Rae Lakes area of the Sierras more than 300 miles north of San Diego. Joe and Kay Quijada are serving as trip coordinators, Dick Bowen, commissioner, said.

Electronics Keglers Sign For Winter Loop

Electronics-SD keglers may sign now for the winter bowling league which bowls Thursdays at Frontier Lanes.

Twelve teams will be formed for the mixed handicap league which will start the winter season the middle of next month. Organization meeting and election of officers will be Sept. 14 at the bowling alley at 6:15 p.m.

Ray McIntyre, ext. 1796, and Bill Binder, ext. 1681, are taking reservations.

Helleis Takes Over Reserve Command

Cdr. John G. Helleis, USNR, a reliability engineer in Convair's Dept. 958-7, assumed command last month of WEPTU-771 at the San Diego Naval Reserve Training Center.

WEPTU-771 is a reserve training unit of the Naval Air Systems Command composed of reserve officers from General Dynamics and other aerospace companies in the San Diego area.

General and Staff Briefed on Convair

Maj. Gen. Frank Rouse, commander of the San Antonio Air Materiel Area, and members of his staff were guests of Convair division Aug. 8 for a briefing on the division's current and future programs and a report on the status of F-102 and F-106 modification contracts. The group toured both the Lindbergh Field and Kearny Mesa plants.

Bowling Leagues Organize For Fall

Organization meetings for CRA bowling leagues for the winter season will be held the last week of August and the first week in September at alleys where leagues will bowl. Meetings will be held at 7 p.m. on scheduled bowling nights.

Leagues will start bowling the second week in September.

For information call Mike Brooks, ext. 1985 LF, or Jim Hayman, ext. 581 LF.

SPEECH LEADERS—Pictured at recent reorganization meeting of Serra Mesa Toastmistress Club at Kearny Mesa were, from left, Sunny Dark, immediate past supervisor of Toastmistress' Golden Desert Region; Margaret Lilledahl, acting president; Helen Maddox, Toastmistress' Council 7 treasurer; and Ezra Johnson, speech clubs' CRA commissioner and guest speaker.

Reorganized Toastmistress Club Will Meet at 7 Sept. 5

The Serra Mesa Toastmistress Club is being reorganized by Convair, Defense Contract Administration Services, and NASA women employes.

Women interested in membership or information on Toastmistress public speaking have been invited to attend the club's next meeting and continental breakfast from 7 to 8 a.m. Sept. 5 in the executive dining room at Convair's Kearny Mesa plant.

Bylaws are being revised and meetings will be held the first and third Tuesdays each month.

Nineteen prospective members attended an initial reorganization meeting Aug. 1. Ezra Johnson, Toastmasters' area governor and a tool engineering Dept. 420-1 supervisor at Convair, was guest speaker and emphasized the importance of effective communication for women both in their roles in industry and in the home.

Margaret Lilledahl of the DCAS district office at Air Force Plant 19 is acting president and Sunny Dark of DCAS plant representative's office at Kearny Mesa is adviser.

Additional information can be obtained by calling Mrs. Dark, ext. 1594 KM, or Beth Underkofler, ext. 1718 KM.

Data Products Plant at El Cajon Goes to Two Shifts, Output Rises

Stromberg-Carlson Data Products' manufacturing plant at El Cajon, Calif., began second-shift operations the first of this month.

Upswing in production of S-C micromation technology systems—specifically components for S-C 4360 and 4060 microfilm recorders—has pushed the El Cajon facility into second-shift operations, explained George Achtmeyer, Data Products manager of operations.

As of the middle of this month 16 men and women had been transferred from first shift with more being added each week in a gradual build-up of the night shift. They are assigned to electronic assembly, production test, inspection, maintenance, receiving and shipping functions.

There now are 223 persons employed at the El Cajon plant, more than double the number on employment rolls at the time the plant opened the first part of February of this year. According to labor forecast for Stromberg-Carlson Data Products, at least half of the total 600 expected to be employed by S-C in San Diego by the end of this year will be working at the El Cajon manufacturing plant.

Pedestrians Urged To Use Sidewalks

Convair people are requested by the Unified Port District to use sidewalks around the parking lot of the former Bldg. 19 at Lindbergh Field site and not to cut across the lot to reach other parking sites.

The Port District points out that, with the lot becoming more congested with increased Port business and rentals by Federal Aviation Agency, that pedestrian traffic is causing a hazardous condition. Convair personnel who do not park in the lot are cautioned to use the Pacific Hwy. sidewalk and the Sassafras St. sidewalk to reach their vehicles.

New Commissioners Appointed For Bonair Flyers, Camera Club

New CRA commissioners were named this month to head two Convair Recreation Association groups, the Bonair Flyers and the Camera Club.

Lambert Taylor, or "Red" as he is better known, succeeds Glen Hemphill as Bonair Flyers commissioner.

Jim Mildice is new commissioner of the CRA Camera Club.

Taylor has been active in the CRA flying club since its reorganization the spring of 1965. He has been flying since he was 16 years old and, at 17, was the youngest licensed pilot in Hawaii, where he learned to fly. He also holds a flight instructor's rating.

Taylor is a reliability engineer based at the Kearny Mesa plant. He received his BS in aeronautical engineering from the University of Illinois and joined the former Astronautics division in 1962 following Army service.

Mildice, a senior electronics engineer in Dept. 967-3, joined Astronautics in 1958 following graduation from Illinois Institute of Technology with a BS in electrical engineering.

He has been interested in all fields of photography over the last 12 years and a member of both the former Astro and present Convair camera clubs for five years. He served as president of the AstroLens for two terms.

Photographic facilities in the CRA Clubhouse on Kearny Mesa will be reactivated in the near future with instruction and workshop sessions expected to start later this fall.

Square Dancers Opening Ranks

CRA's square dancing group, Dynamic Eights, opens its ranks for new members as it starts another beginners' course Sept. 12.

Registration will be accepted at the first three sessions, Sept. 12, 19, and 26, 8 to 10 p.m., in CRA Clubhouse auditorium, Kearny Mesa. After that no new members will be allowed until the spring beginners' course.

Instructor will be Clark Elliott, well-known square dance caller.

Cost is a nominal 50 cents per person for each weekly instruction session. The course is open to all ages, from 16 up, said CRA Commissioner Marty Stutz. Around 30 were graduated in July from the 20-week spring instruction course.

Intermediate square dancers are invited to join the Dynamic Eights for its regular dance sessions from 8 to 10 p.m. each Thursday in the Clubhouse.

For further information call Roland Hagar, ext. 1954 KM; Pearl Garrison, ext. 1141 LF; or Lee Lemen, ext. 556, General Atomic.

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'BIG VOICE' TO CALL FOR SQ. DANCING

A big man with a big voice typifies Clark Elliott, new instructor and caller for Convair's square dancing group, the Dynamic Eights.

Elliott succeeds Dotty and Van Vander Walker, who had called for the CRA and ARA square dancing clubs over the last 18 years. Vander Walker retired last month.

The new CRA caller stands 6 feet, 6 inches tall and has a voice that carries to the rafters as he sings out the rhythmic calls.

Interested in music all his life, Elliott has been a square dancer for the last 12 years. His wife, Aillene, joins in his dancing activities and is an expert square and round dancer.

RAY McINTYRE ROLLS 279 GAME

Ray McIntyre turned on the heat the last night of summer league bowling of the Electronics league to score a 279 game with a 695 series. McIntyre's average is 181. His team, the Misfits, came in third in the Electronics tournament. The Pin Shakers, captained by Bill Binder, headed the league.

Bombers Beat S-C To Win League Title

Bombers, Electronics-SD entry in the CRA slow-pitch softball league, downed the Stromberg-Carlson team last week to take the American League title. Score was 13 to 11.

The two teams had gone into the league play-off tied 4-1.

Jack Kelley, Bombers' third baseman, drove in two scores with a home run in the 7th to win the game.

The Bombers are now in a two-out-of-three series with the Pylons, National League winners, to decide the plant championship.

Beach Party, Bicycle Ride Slated Aug. 26

Members of the CRA Bicycle Club will combine a 25-mile ride with a beach party at La Jolla Shores this Saturday, Aug. 26.

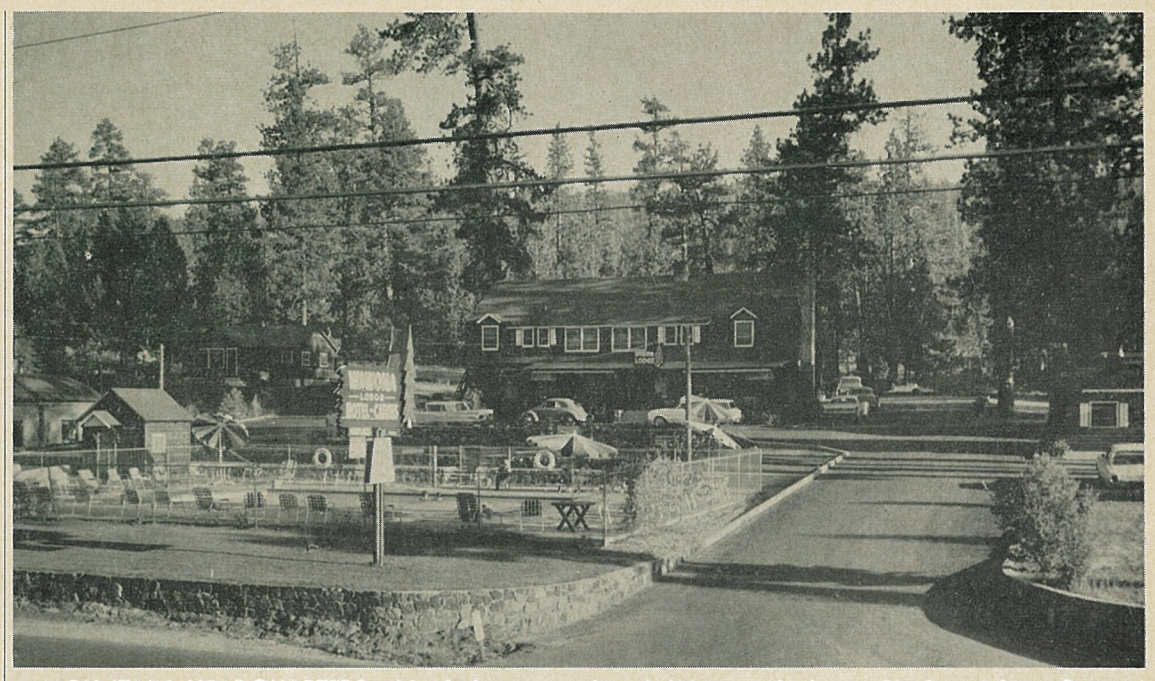
The group will meet at 10 a.m. in the La Jolla area and return to La Jolla Shores about 1 p.m. for swimming. Additional information can be obtained from Al Brown, ride leader, home phone 273-9802.

Quality Assurance Has Family Picnic

A total of 270 members and guests enjoyed quality assurance Dept. 141-2 and 141-4's annual family picnic July 22 at CRA Missile Park.

Highlighting the afternoon was an inter-departmental softball game with Bob Bailey and Don Miller, supervisors of the two sections, as captains and L. I. Medlock, director of reliability control, umpiring.

Richard Dubel, Vito Sardo and Don Menard served as the picnic planning committee. Milt Walker was prize chairman.



MOUNTAIN HEADQUARTERS—Nestled among pines is Wawona Lodge at Big Bear where General Dynamics people will join in annual Autumn Weekend sponsored by CRA Ice Skating Club Sept. 15-17.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Aug. 29. Call ext. 1071 LF or ext. 3322 KM.)

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ARCHERY—Club shoot Sept. 3, 1 p.m., CRA range.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING—New courses start Sept. 11, CRA Clubhouse. Call Royce Riggan, ext. 1018 LF.

BICYCLE CLUB—25-mile ride and beach party at La Jolla Shores Aug. 26. Call Al Brown, 273-9802.

BONAIR FLYERS—Fly-in to Catalina Island Aug. 27. Call Lyle Wood, ext. 3210 KM Meeting Sept. 5, 7:30 p.m., CRA Clubhouse.

BOWLING—Sign now for winter leagues. Call Mike Brooks, ext. 1985 LF, or Jim Hayman, ext. 581 LF.

BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB — Meeting Sept. 6, 7:30 p.m., Floral Association Bldg.

HEALTH CLUB—Physical fitness program for all ages in CRA Clubhouse, Kearny Mesa. Open 9:30 a.m. to 10 p.m. Mondays through Fridays; 10 a.m. to 5 p.m. Saturdays. Call ext. 1111 KM.

ICE SKATING—Sign now for annual Autumn Weekend to Big Bear, Sept. 15-17. Call Bud Davies or Dora Molina, ext. 2751 KM, or Joan Kosen, 274-5227. GD family night every Thursday, 6:15-7:45 p.m., Mission Valley Ice Arena.

PISTOL CLUB—Club shoot Aug. 27, 9:15 a.m., SD Police Pistol Range.

RADIO CLUB—Meeting Sept. 7, 7:30 p.m., CRA Clubhouse.

RIFLE CLUB — Senior shoot tonight, Aug. 23, 7:30 p.m.; junior shoot Saturday, Sept. 2, 8 a.m., both at Gillespie Field Range.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB—Meeting Sept. 5, 8 p.m., Catamaran Hotel, Mission Bay. Water skiing after work Thursdays, 5:30 p.m.; Saturdays and Sundays, 9 a.m., Crown Point. Call Harry Eastman, 274-4982.

SQUARE DANCING — New beginners class starts Sept. 12, 8-10 p.m., CRA Clubhouse. Dynamic Eights dance every Thursday, 8-10 p.m.

TRAILERS—Road Runners meet Aug. 24, Gillespie Field Clubhouse. Travelers meet Sept. 5, 7:30 p.m., CRA Clubhouse, KM.

WIVES—Potluck today, Aug. 23, CRA Clubhouse.

WOMEN'S GOLF — Tourney Sept. 9, San Carlos.

GD People to End Summer With Weekend Among Pines

General Dynamics people will have a chance to end the summer with a weekend among the pines if they sign for the annual Autumn Weekend at Big Bear Lake, sponsored by the CRA Ice Skating Club, Sept. 15-17.

The entire Wawona Lodge has been reserved for General Dynamics, CRA Commissioner Bud Davies said. Ten rooms with private baths will accommodate from two to five persons each. Eighteen cabins are available for family groups of up to 12 persons. Food will be catered by the Prophet Co., operators of Convair cafeterias. Meals will include ranch-style breakfasts on Saturday and Sunday, a pool-side buffet Saturday noon, and an outdoor barbecue dinner Saturday night, followed by a campfire songfest.

Activities include hiking, riding, boating, fishing, swimming, ping-pong, shuffleboard, horseshoes, and volleyball. A private ice skating session will be held on Sunday morning.

Music will be available at the lodge for dancing in the evening and tables and cards provided for card players. The traditional pizza party will be held Saturday midnight.

Cost of the outing is $13 per person for two nights lodging and meals. Children under 8 yrs. may go for half price.

Transportation is the responsibility of each individual. Wawona Lodge is 155 miles from San Diego over good roads. The trip can be made comfortably in three hours. Maps and instructions will be provided.

Reservations may be made at employe services outlets and the CRA Clubhouse, Kearny Mesa, until Sept. 8. No refunds will be made after that date.

For information call Davies or Dora Molina at ext. 2751 KM, or Joan Kosen, home phone, 274-5227.

Boyds Earn Five Top Awards In Garden's Club Annual Show

Margaret and Henry Boyd took the lion's share of best of show awards in CRA Garden Club's annual Summer Show, featuring dahlias, fruits, and vegetables, held Sunday, July 30, in Balboa Park's Floral Association Bldg.

Together the Boyds garnered five top awards. Boyd had the best bloom in the show, "First Lady," a near perfect yellow formal dahlia.

Mrs. Boyd won best arrangement honors with a modernistic version entitled "Storm Warning."

They also won awards for best medium bloom, smallest dahlia, and best three blooms.

Mr. and Mrs. Charles Splinter's entry won best large bloom title. They also won best fruit in show award with their avocados.

Mr. and Mrs. Al Hornby had the largest dahlia bloom, best three pompons, and best three miniature ball dahlias.

Mike Alianelli's bell peppers took best vegetable honors. Bill Spann entered the best corsage.

A special award was won by Mr. and Mrs. Ted Cross for their three banana squash, each weighing around 40 pounds apiece. The large squash attracted more attention than any other display.

Cindy Sinnott had best children's entry in the 5 to 11 year class; Janice Zimmerman had best of show for children in the 12 to 16 division.

Next Convair flower show will be the Chrysanthemum Show on Oct. 29.

Iris Oster Winner In Flight A Golf

Iris Oster held low score in Flight A, and Edith Mellett, low score in Flight B, in GD Women's Golf Club play Aug. 12 over the nine-hole Cottonwood course. Twenty-five girls turned out for the monthly tourney.

Other Flight A winners were: Freda Magargal, second; Marilynn Hersey, third; and Vi Hirst, fourth.

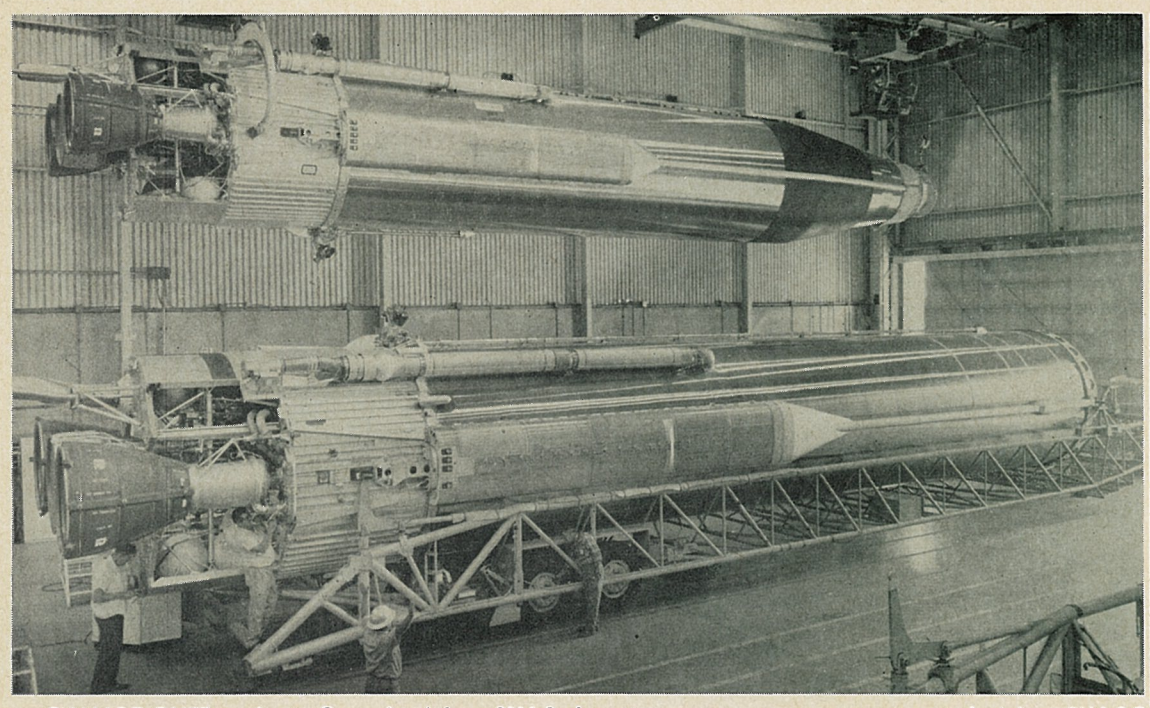
Flight B: Gerry Swanson, second; Gladys Harris, third; and Evelyn McFall, fourth.

Next club tournament will be Sept. 9 at San Carlos course.

Be sure to use the ZIP code when addressing mail. It speeds up delivery!

IT WAS A BALL—Quality assurance deparment members held their annual family picnic in CRA Missile Park.

TENNIS CHAMPS—Peter Proskauer and Mrs. Sharron Williams congratulate each other on winning men's and women's championships in recent CRA Tennis Club novice tournament.



CHANGE-OVER — Last Convair Atlas SLV-3 booster passes over new uprated Atlas SLV-3C as it is moved by overhead crane from weighing dock to trailer at Kearny Mesa plant. George Zuniga, rigger, directs crane operators as Roy Cowley, Cliff Dunlavey and Fred Martinez work on SLV-3C.

New Era Begins For Atlas With SLV-3A, SLV-3C

(Continued from Page 1)

ered into its missile trailer at the Kearny Mesa factory after being weighed, it took its place alongside the third new SLV-3C, No. 5903C.

SLV-3C, No. 5903C, also is awaiting shipment to ETR for use in the Atlas-Centaur 15 flight to send Surveyor 7 to the moon next year. The first SLV-3C, No. 5901C, has been mated with its Centaur second-stage vehicle at ETR's Complex 36B and is being readied for its AC-13 flight role in the Surveyor 5 mission.

First article configuration inspection (FACI) for the first new Atlas SLV-3A, No. 5602A, was conducted last month. It will be delivered in October and used next year as booster for NASA's Orbiting Geophysical Observatory-E mission.

Fifty-two of the 56 SLV-3s built by Convair for Air Force and NASA use have been launched to date. Fifty of the 52 performed successfully—for an overall booster reliability of 96 per cent.

Earlier this year, Convair received a maximum $3.8 million incentive fee for exceeding 90 per cent flight reliability and countdown performance in SLV-3 space launches. The fee provision was included in an incentive contract awarded in 1962 for production and launch of 35 of the SLV-3s.

Based on confidence established by boosters in the original incentive contract, the Air Force and Convair negotiated a follow-on contract in 1965 calling for 100 per cent flight reliability. This contract covers production and launching of Atlas boosters, including new SLV-3As and SLV-3Cs, for space missions through 1968.

The first of the 56 SLV-3s was delivered to the Air Force late in 1964 and was used as a booster in the Gemini program. Other missions in which the SLV-3s have been used included Lunar Orbiter, PRIME, ATS, OAO, OGO, SNAPSHOT, Air Force Agena and Mariner-Venus flyby.

Designed especially as a standard launch vehicle for space missions, the SLV-3 was the first Atlas to utilize "plug-in" kits for telemetry guidance, tracking, autopilot and electrical systems.

The new SLV-3C boosters, for use with Convair's Centaur second-stage vehicles, is 51 inches longer than the SLV-3 and carries an additional 21,000 pounds of usable propellant. With Centaur, it can send a 2,900-pound payload to escape velocity and 2,200 pounds to Venus or Mars.

New SLV-3As, for use with Agena or other second-stage vehicles, have 117-inch longer tanks and carry an additional 48,000 pounds of usable propellants. With the Agena, they can send 1,450 pounds to escape velocity or a 985-pound payload to Mars.

Dynamics Earnings Increase Over First Half of Last Year

Net income of General Dynamics Corporation and subsidiaries for the six months ended June 30, 1967 was $29,727,000 equivalent to $2.86 per share of common stock, Roger Lewis, president, announced last week.

This includes a non-recurring long-term capital gain during the second quarter of $5,274,000, equivalent to 51 cents per common share, from the disposition of 1,000,000 shares of Airlift International, Inc. These shares were originally acquired in 1963 by General Dynamics in connection with the refinancing of a debt for aircraft.

Net earnings for the like period last year were $22,576,000, equivalent to $2.13 per share.

Sales for the first six months of 1967 totalled $1,009,324,000, compared to $809,093,000 for the first half of last year.

Net income for the second quarter of 1967 was $19,328,000, equivalent to $1.86 per common share including the non-recurring long-term capital gain, or $1.35 per common share excluding that gain. That compares with $13,321,000, or $1.29 per common share, for the like period of the year before.

Sales in the second quarter of 1967 were $537,268,000, compared with $494,133,000 for the like period of 1966.

The increase in earnings during the second quarter, Lewis said, did not keep pace with the improvement in sales primarily because of higher-than-anticipated increases in costs in our marine operations, for both surface ships and submarines, and because of a continued unsatisfactory level of profits in the operation of the Canadian subsidiary, Canadair Limited.

Marine operations, particularly for surface ships, Lewis noted, have grown at an extraordinary pace. Since the Company acquired its surface ship facility at Quincy, Mass., in 1964, that yard has won contracts totalling nearly half a billion dollars, and its employment has risen from zero to nearly 10,000 persons. Currently, the Quincy shipyard has under contract or construction 17 large vessels of various classes.

Data Products Picnic Date Set

Stromberg-Carlson Data Products annual family picnic will be held Sunday, Sept. 10, at the Missile Park on Kearny Mesa.

Families will enjoy a barbecue meal, free beer, soft drinks, and ice cream in the early afternoon.

Games and contests with lots of prizes are planned for the youngsters while the adults play bingo. Also, Jim Pascarella, chairman of Data Products recreation committee, said that youngsters may ride the miniature train and merry-go-round as many times as they like without charge. Last year over 5,000 train rides were given.

Only cost is $1 a family. Tickets are on sale by all departmental representatives at both San Diego plants.

Committee members assisting Pascarella with arrangements are Jack Swank, industrial relations manager, Trudy Rice, George Elmore, Carl Creager, and Nate Waddington.

Welding Breakthrough Seen in New Technique

Dr. Richard D. Potter got rather interesting results with a piece of common aluminum foil and his youngster's cap pistol. They gave him an idea for making virtually fool-proof, solid-state welds with sudden pulses of energy.

"Since the patent is still pending, I'm not a liberty to say precisely how I used these two elements," said the Fort Worth division design specialist in structure material design group. "Suffice to say we feel we've made a breakthrough in the art."

Dr. Potter's technique is to place two metals together, then join them with sudden, high-powered energy bursts.

Initially, he used energy pulses created by explosions.

Now, he's awaiting arrival of a new machine from Quanta Welding Co. in Michigan. The machine creates on the order of two million watts in a fraction of a second.

"The shorter the duration of the burst, the more energy created," Dr. Potter said. "For this reason, we hope to be soon working successfully in the millisecond regime."

Welding by pulsed energy permits a smooth fusion of molecular structures of materials involved—even on titanium and other exotic metals.

Conventionally, metals are welded by fusion or electrical-resistance. Heat from this type welding often damages the material somewhat at the point of weld.

"Using our technique, however, the materials suffer no heat damage," Dr. Potter said. "The metals, in fact, retain their full properties.

"This kind of result is absolutely necessary in working with the more exotic metals that will go into space craft and other hypersonic vehicles."

Technique Among 'Most Significant'

Dr. Richard D. Potter's new technique for making solid state welds by pulsed energy has been named one of the 100 "most significant new technical products of 1967."

The honor was bestowed by Industrial Research Magazine. Pictorial results of Dr. Potter's work will be displayed at the New York Hilton Hotel Sept. 18 and 19.

Occasion will be National Industrial Research Week, Sept. 17-23—sponsored by the magazine.

ENERGY WELD—Metal welded by pulsed energy gets thorough testing in Forth Worth division test lab. Dr. Richard D. Potter invented new technique which looms as breakthrough in art.

Men From Five GD Divisions Attend Presentations Seminar

The second and third in a series of technical presentation seminars were sponsored by Convair last week as part of the division's Management Upgrade program.

Representatives from five General Dynamics divisions attended the seminars, conducted in San Diego by Sears and Co., a San Mateo, Calif., management consultant firm.

The seminars were designed to improve quality of presentations to customer groups and covered subjects such as the role of engineers and scientists in defense marketing, essentials of the sales experience, essentials of communications, making effective oral presentations and use of audio-visuals in presentations.

Attendees listed by division included: Fort Worth—T. S. Webb, J. C. Redmond and D. E. Pratt; Pomona—D. C. Tubbs and T. C. Patterson; Electronics-SD—R. L. McCreary and T. A. Fulshaw; Stromberg-Carlson Data Products—W. H. Jones and T. L. Slater.

Convair—P. S. Bazler, J. W. Beatty, C. S. Brandt, J. W. Coddou, K. E. Coughlin, D. P. Cumming, C. C. Dragila, D. L. Fagan, J. M. Farrar, D. W. Grisel, R. A. Haubert, J. E. Heatherly, E. L. Jacobson, H. R. Kennedy, R. A. Johnson, R. W. Keehn, F. R. Lee, R. A. Lynch, R. C. Lynch, F. X. Marshall, D. R. Miller, R. W. Miller, W. F. Miller, L. A. Payne, A. W. Reed, R. M. Sewell, F. J. Stewart, K. A. Stone, E. D. White and M. R. Yale.

BEATING THE HEAT—Doris Zech of General Atomic at San Diego cools off on the shore of Mission Bay while the rest of Southern California steams in August weather.

SAN DIEGO EDITION

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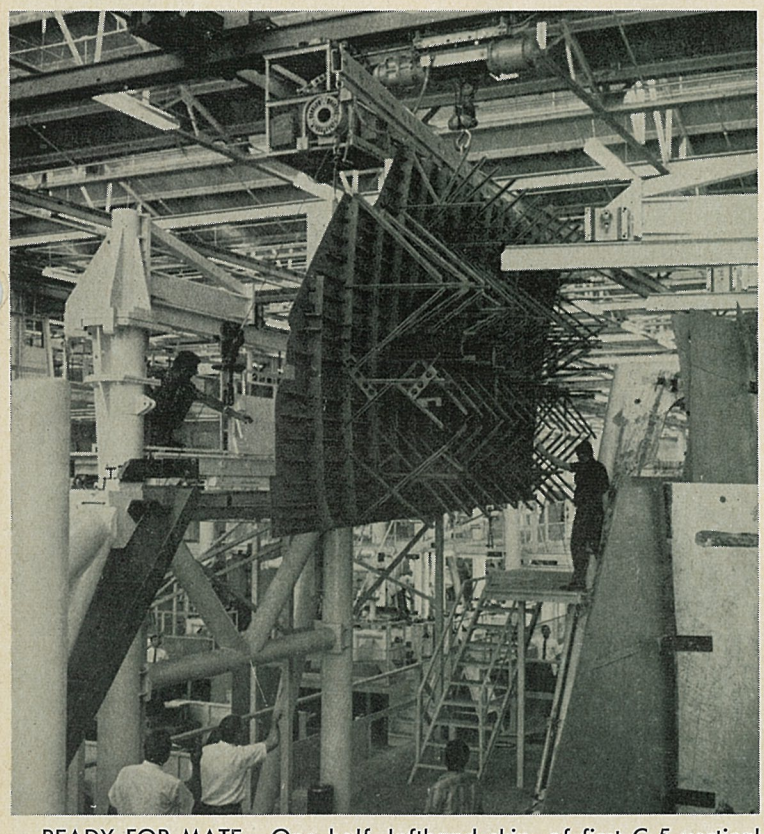
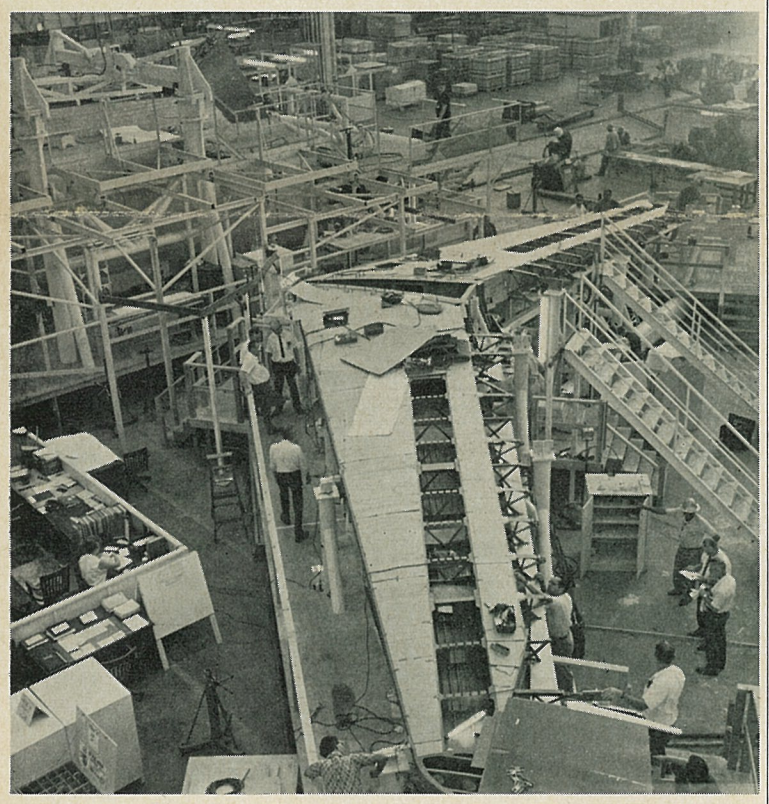


READY FOR MATE—One half, lefthand skin, of first C-5 vertical stabilizer is swung into large mating fixture in Convair production area to be joined to righthand skin. Access ladder inside vertical stabilizer will be installed within lower set of diagonal braces.



DOWN THE LINE—First C-5 horizontal stabilizer going through Convair's production line is laid in flat position in large fixture in Lindbergh Field's Bldg. 2. Both horizontal and vertical stabilizers for first ship's set are now in final assembly heading toward mate proofing next week. First empennage is due for delivery to Lockheed-Georgia Co. first part of October.

Systems Safety Engineering Concepts Outlined at Briefing

Systems safety engineering concepts and related Air Force and Department of Defense requirements were outlined for more than 75 Convair staff departmental representatives in a briefing at Kearny Mesa last month by Lt. Col. Howard Davis, deputy chief of the systems engineering group, USAF Directorate of Aerospace Safety.

Davis said the key to systems safety engineering is early identification of potential safety problems so they may be corrected during system design.

"System safety must be applied during the concept formulation phase and continued through the life cycle of a system," he said.

Air Force Regulation 127-1 defines Air Force agencies' responsibilities and DOD Military Specification 38130A establishes contractor requirements.

"Air Force requests for proposals will identify those portions of the military specification which are to apply to the development of a proposed system," Davis said, in speaking to the group.

"A system safety engineering plan will be negotiated at the time of awarding a contract and will be the primary document used in the course of conducting system safety engineering during the development, manufacture and

(Continued on Page 2)

Salvage Schedule

Next employe's sales day at Convair's salvage yard, Lindbergh Field plant, adjacent to Gate 5, will be Sept. 16, 8 a.m. until noon.

Atlas-Centaur Ready to Boost Surveyor 5

Atlas-Centaur 13 is ready to send NASA's Surveyor 5 to the moon.

Convair's first new 51-inch-longer Atlas SLV-3C will be booster for the mission with launch tentatively scheduled for 12:39 a.m. San Diego time Sept. 8. The SLV-3C has increased booster and sustainer engine thrust ratings and carries eight instead of six helium bottles for internal tank pressure during flight.

Centaur 10D, the second-stage vehicle, will have a second stage burn of its high-energy liquid hydrogen engines after parking orbit coast and will be flying subminiature rate gyro packages for the first time.

The 2,215-pound, camera-equipped Surveyor is to soft land on the gray lunar soil in the Apollo primary landing zone just north of the lunar equator at the southern end of the Sea of Tranquility after its 66-hour flight.

It will carry a new alpha scattering experiment to bombard a small surface area with alpha particles for compositional analysis of the soil. The experiment is designed for detection of scattered alpha particles from all elements except hydrogen and helium and detection of protons from lithium, boron, nitrogen, fluorine, sodium, magnesium, aluminum, silicon, phosphorous and sulfur.

One of the spacecraft's landing feet also will be equipped with 1/1,500-pound magnets.

Surveyor 5's camera will be equipped for the first time with a new mirror head, functioning like the top element of a periscope, that can be rotated horizontally and vertically. A four-color filter wheel will be mounted in the mirror head assembly for color-reconstituted picture production.

E. E. Barringer is Convair project engineer for the AC-13 flight.

Daniel Sarokon will be launch conductor. Key Convair ETR personnel assisting include J. L. Johnson, J. E. Hart, J. H. Sylvester, J. M. Kechele and Q. E. Gilmore.

The 30-man team from Kearny Mesa was at the Cape with Barringer two weeks ago for equipment assessment and flight readiness review. They were W. D. Taylor (captain), J. W. Swigart, J. B. Jarman, G. D. Clapp, J. H. Warkomski, R. T. Kubota, T. E. Butterfield, H. L. Hahn, M. J. Debreceni, J. G. Largent, Larry White, D. M. Peterson, J. E. Geil, Joe Saugier, J. P. Cushman, J. P. Hancock, A. J. Bradshaw, Ted Shamshoian, C. J. Boeldt Jr., F. L. Cook, Jim Burkhardt, J. W. Taylor, R. E. Wisma, C. C. Campbell Jr., D. E. Quinn, H. E. Harper, E. H. Christensen, A. W. Wiest, J. N. Brown and J. G. Helleis.

Composite readiness tests for the AC-13 vehicles were run last week.

AC-13 will be the fifth operational flight in the Surveyor program. The AC-10, AC-7 and AC-11 vehicles each had single burn, direct ascent flights and AC-12 had two-burn, parking-orbit mode.

After the Atlas SLV-3C lifts the Centaur and Surveyor into space, Centaur 10D will fire its main engines 321 seconds, coast in orbit at 90 nautical miles for 116 to 1,500 seconds (depending on launch time) and have a sec-

(Continued on Page 2)

Contract Awarded For More OV1s

Convair division has received a $4,333,000 contract for production of four additional Orbital Vehicle One (OV1) scientific satellites and a propulsion system for a fifth for the U.S. Air Force Office of Aerospace Research (OAR).

Satellites numbered 15, 17, 18 and 19 will be produced by Convair.

The OV1-16 satellite, a 24-inch sphere weighing 600 pounds, will be supplied by the Air Force Cambridge Research Laboratories of OAR, with Convair furnishing the propulsion module.

Production of heat-shield fairings with satellite launch support activities also are covered by the contract.

The five OV1s will be launched into polar orbits next year from Vandenberg AFB after being lifted into space atop two Atlas boosters.

OV1s 15 and 16, scheduled for launch in June, will carry atmospheric density measurement experiments for the Air Force Space and Missile Systems Organization (SAMSO)/Aerospace Corp. and the AF Cambridge Research Laboratories of OAR. Both will have a low initial orbital perigee of about 85 miles and an orbital "life" of about 90 days.

The other three satellites—OV1s 17, 18, and 19—are tentatively scheduled for launch in September, 1968, and will be the first three OV1s to be boosted into space simultaneously on the nose of an Atlas. (A truss inside the new OV1 fairings will be redesigned to hold the three in place during the Atlas-powered flight.)

Solid-propellant motors of each of the three vehicles will accelerate them to orbital velocity after separation.

OV1s 17 and 18 will be placed into near circular orbits of 300 nautical mile altitude while OV1-19 will be placed in a highly elliptic orbit with a maximum altitude of 3,000 nautical miles.

OV1-17 will carry seven SAMSO/Aerospace experiments to determine effect of solar radiation on the atmosphere and to make cosmic ray measurements.

It also will establish a new "first" for the OV1 program by carrying a small SAMSO OV5-7 tetrahedral research satellite as a "piggy-back" payload. The OV5-7, housing a solar X-ray experiment, will be ejected after OV1-17 is in orbit.

OV1-18 will carry three experiments—one for the Air Force Advanced Research Products Agency to study characteristics of the ionosphere, one for SAMSO/Aerospace to measure electromagnetic interference at orbital altitudes, and one for the Air Force Weapons Laboratory to study solar radiation.

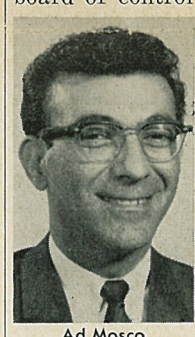
OV1-19 will house 11 experiments for SAMSO/Aerospace and the Air Force Weapons Laboratory to measure energetic particles and radiation in the inner Van Allen radiation belt. These experiments will aid scientists in studying effect of radiation on manned space flight.

Lt. Col. Clyde A. Northcott Jr. is OV1 program manager. He was recently selected by Maj. Gen. Ernest Pinson, commander, USAF Office of Aerospace Research, to

(Continued on Page 2)

MOSCO SUCCEEDS ARCH RAMBEAU

Ad Mosco has been chosen by the Convair Management Club board of control to succeed Arch Rambeau as president of the club for the balance of the club year.

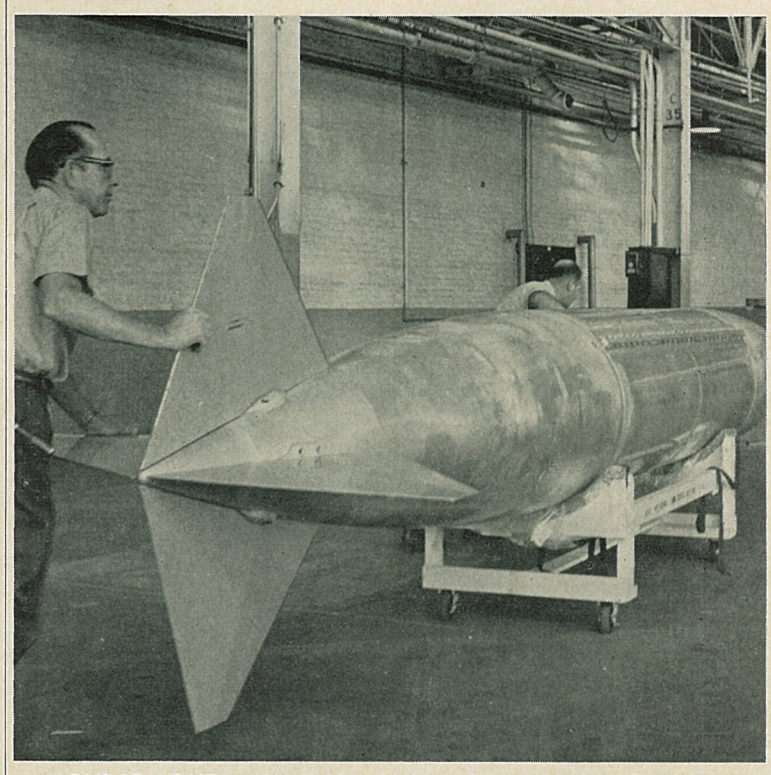


Ad Mosco

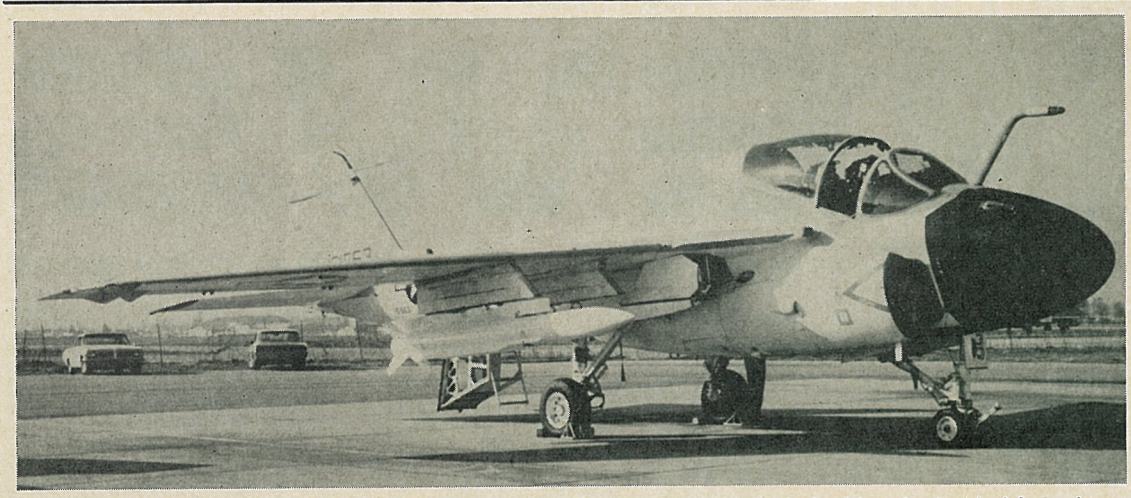
Rambeau submitted his resignation the first of the month when he transferred from Convair division to Corporate Headquarters on the industrial relations staff at the New York office.

Mosco held the position of second vice president for this year and served as recording secretary during the 1966-67 term. He was a board member in 1962-63 and managed sports activities for the club over a four-year period.

He has been with Convair nearly 17 years and is an estimating supervisor, Dept. 195-3.



MOVING OUT — Paul Hood and Nick Perkovich, leadmen in Convair's Dept. 002, position first completed FB-111A external fuel tank before shipment to Fort Worth division late last month. Two tanks were airfreighted by Air Force C-97 on Aug. 23.



ADDED FUNDS—Aircraft carrying Standard ARM missiles will include Navy's A-6A (shown) and Air Force's F-105. Pomona division recently received $12,644,376 modification to existing contract for Standard ARM.

Wives to Hear Talk On Drug Dangers

A member of the San Diego police force will talk on "Dangerous Drugs" at the Sept. 20 luncheon of the Convair Wives at the Hanelei Motel Restaurant in Mission Valley.

An 11 a.m. cocktail hour will precede noon luncheon. Hostesses are Margaret Brock and Betty Calman.

Call reservations by Sept. 18 to Joan Chiarappa, 274-2503; Anita Klepach, 264-1013; Flora Loftin, 276-4270; or Frances Thompson, 278-1942.

More Funds Approved For Standard ARM

The Naval Air Systems Command last month awarded a $12,644,376 modification to an existing contract with Pomona division for the Standard ARM (anti-radiation missile).

Standard ARM is an air-to-ground version of the Navy's ship-to-air Standard Missile now in production at Pomona.

Development of Standard ARM started at Pomona early last year. A total of $36 million in development funding has been awarded General Dynamics prior to this month's award.

Standard ARM will be an air-launched weapon that will home on radiation emitted by ground radar, destroying the installation with an explosive warhead.

Convair division is continuing to support the Standard ARM research and development program in the areas of flight test and development of the ARM launching system and support equipment. R. E. Dietz is in charge of Convair's assist work.

In addition to the missile itself, the system will include target detection and target display avionics and necessary support equipment. Aircraft carrying Standard ARM will include the Navy A-6A and Air Force F-105.

Initial version of the Standard ARM, now in production at Pomona, uses existing radiation-seeking avionics but has increased range and speed over a broader attack mode than previous anti-radiation missiles.

Systems Safety Engineering Concepts Outlined at Briefing

(Continued from Page 1)

test of the system."

System safety engineering concepts are to be applied from time of award of the contract through preliminary and detailed design, procurement, production, testing and operational use, he said.

Davis pointed out that cost of a modern weapons system is staggering and that any one loss today has a far greater impact than ever before in history.

"Preliminary information from studies now under way indicate that 25 to 40 per cent of all accidents occurring during the early operational period are caused, to some degree, by poor design," he said. "These are the accidents we hope to reduce by applying system safety during design."

Davis said the designer, even though he considers safety while designing the system, cannot be expected to be a specialist in reliability, maintainability and safety, just as he cannot be expected to be a specialist in designing avionics, propulsion and payload systems.

He said the system safety engineer can assist the designer in reducing deficiencies, in uncovering problems that can be eliminated prior to manufacture and test and by pointing out unsatisfactory designs.

L. I. Medlock, Convair director of reliability control, was host for the briefing. Davis was introduced by Curtis N. Mozley, a systems safety engineer in Dept. 145-1. Mozley joined Convair in July after retiring from the Air Force as a lieutenant colonel. During his last seven years of active duty he was assigned to the missile and space safety division of the USAF Directorate of Aerospace Safety.

SYSTEMS SAFETY—Lt. Col. Howard Davis, center, deputy chief of USAF systems engineering group, discusses Air Force and Department of Defense systems safety engineering regulations with L. I. Medlock, left, Convair director of reliability, and Curtis N. Mozley, Convair systems safety engineer. Davis was at Convair to brief staff and departmental representatives.

Contract Awarded For More OV1s

(Continued from Page 1)

become commander of the Los Angeles office of OAR.

L. E. Ottem, Convair OV1 program manager, said the OV1 15 through 19 satellites will be more sophisticated, have a higher density of scientific equipment and have greater data collection and transmission capabilities than previous satellites in the OV1 series.

Atlas-Centaur Ready For Surveyor Shot

(Continued from Page 1)

ond main engine "burn" of 112 seconds.

Following separation of the Surveyor, the Centaur will be turned and its orbital path altered through retro-thrust propellant "blowdown." It will bypass the moon and remain in an elliptical orbit 12 to 16 days.

Complex 36B's umbilical booms have been modified to accommodate increased length of the SLV-3C. Complex 36A is undergoing similar modification in preparation for the AC-15 flight. AC-14, with Surveyor 6, will follow AC-13 from Complex 36B.

College Textbook on Computers Expected to Become 'Best Seller'

A college textbook by a young Convair engineer that was published less than three months ago already has been adopted for use by colleges and universities across the country and is well on its way to becoming a best seller in its field.

The author, Robert W. Swanson of Dept. 578-3, is Convair manager for Douglas Saturn 4-B test programs. The new volume is titled "Introduction to Business Data Processing and Computer Programming."

Swanson has been working with computer technology since pre-computer days, helped install the first computer at the University of Wyoming, and has been teaching University of California Extension computer courses in San Diego for five years.

Unlike most beginning authors, he had a contract before beginning his manuscript and had negotiated with agents from five firms for publication rights.

"Sounds almost too good to be true," he concedes.

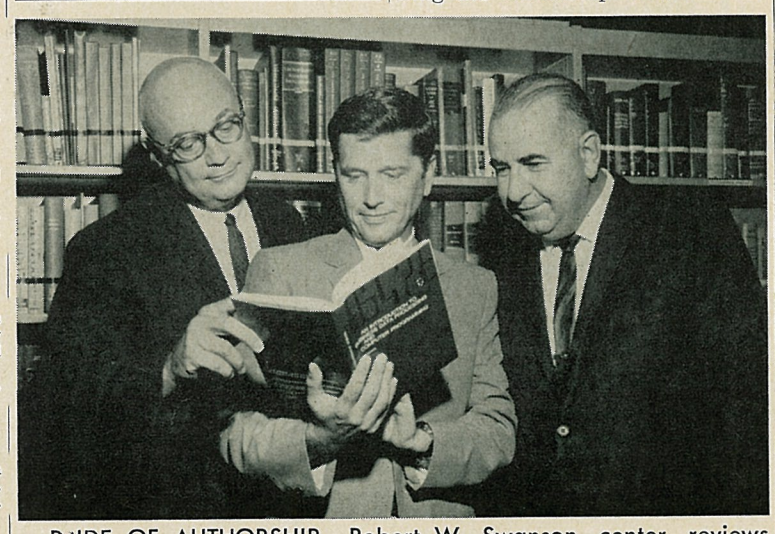
Although the new textbook came off the press three or four months after most colleges had selected tests for the coming year, it will be used next semester by Columbia University, the University of California at San Diego, University of California Extension, San Diego State College, Sacramento State College, Southern University and several small schools in the south and midwest.

Officials of Dickinson Publishing Co., West Coast subsidiary of Prentiss-Hall, say they expect it to be their first textbook to reach million dollar sales.

The new text is directed toward students receiving first serious exposure to computers and covers the essential characteristics of electronic data processing in the business environment. A photo of Convair's hybrid digital-analog computer is included in illustrations.

Swanson received his industrial engineering degree from Columbia, where he majored in operations research, in 1950 and it was while he was a student there that he and friends first engaged in pre-computer experiments at the IBM plant in Poughkeepsie, N. Y.

He helped install the University of Wyoming's first computer in 1955 and taught computer courses there in 1958 and 1959 while employed by the former Astronautics division in Cheyenne.



PRIDE OF AUTHORSHIP—Robert W. Swanson, center, reviews his recently published textbook on data processing and computer programming with Keith Blair, left, Convair library supervisor, and Paul Ferrara, director of engineering administration and services. Autographed copy was presented to Convair engineering library.

Log Book Entries

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Aug. 18:

Dept. 001-0, B. T. Robinson; 005-0, S. M. Sharp; 015-0, L. W. Kirkendall, H. A. Wilson; 027-0, R. R. Brown; 049-0, L. J. Baldwin, C. Rosefeld; 059-3, I. S. Mitchell; 149-7, B. J. Moore; 170-1, C. A. Otte; 250-3, J. B. Evans, T. F. Gurbacki, B. A. Rusk, W. J. Wissinger; 519-0, J. H. Kersey; 574-2, L. N. Schofield; 715-0, J. Friel (two awards), W. H. Galloway, V. Harding; 761-0, M. Breckenridge, R. A. Deutschman, L. M. Hernandez, C. E. Weber, G. C. Zimmerman; 763-1, R. E. Lopez; 810-1, N. McCree; 835-3, J. A. Condon Jr.; 836-1, A. C. Silva; 842-0, R. C. Ribby (two awards); 953-0, J. W. Kieff; 957-0, F. M. Slonina.

Employe Suggestion awards approved for the week ending Aug. 25:

Dept. 015, A. J. Capuccini; 019-0, M. F. Miller; 027-0, E. L. Krowl, C. L. McNeal (two awards); 031-0, J. W. Burgreen (three awards), J. Nonzeta, W. E. Ritter, E. Weems; 059-3, V. Dressler; 141-4, R. K. Pierce; 143-3, D. I. Shepherd; 144-1, S. G. Jenkins; 144-2, R. A. Ihde; 149-7, B. Hahn; 250-1, M. E. Nicolet, R. Whaley; 250-5, J. Burrows, C. Larabee; 507-0, E. V. Marikle Jr.; 518-0, J. Lizarraras; 717-0, W. C. Kaiser; 761-0, A. L. Aunchman, L. Donahou, P. E. Grasmick (two awards), G. C. Zimmerman; 763-0, C. M. delaBretonne; 780-2, J. J. Ballatore, E. L. Escherich; 780-3, M. B. Clapper; 833-1, J. S. Miranda; 833-2, M. M. Wood.

EASTERN TEST RANGE

Dept. 979-0, M. H. Kibbe.

Invention Disclosures

CONVAIR

BRACKA — B. W., Dept. 580-3. Bi-Partite Wing L. E. Slat Device and Actuation Mechanism.

CHRISTOPHER—R. C., Dept. 454-0, Metalized Flame Spraying Process of Plastics.

KERBY — C. M., Dept. 512-2. Combined Stiffened Skin and Frame Cap.

OGMAN — M., Dept. 962-5. A Mechanically Operated Hydraulic Static Pressure Control Valve.

ROLLA — C. P., Dept. 491-2. Invalid Bed.

Rider-Driver

CONVAIR

RIDE WANTED—From 4469 Campus Ave., near Park and El Cajon blvds., North Park, to Kearny Mesa, 7:30 to 4:15 shift. Phone Henry Pawlicki, ext. 3073 KM or (home) 295-1331.

SHARE RIDE—North Park to Kearny Mesa, 8 a.m. to 4:45 p.m. shift. Phone L. S. Chicoine, ext. 2080 KM or (home) 283-8324.

RIDE WANTED — From 3380 Felton St., North Park (corner Felton and Upas), to Kearny Mesa, 7 a.m. to 3:45 p.m. shift. Phone Austin Peters, ext. 3121 KM or (home) 281-0105.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Mondays, Sept. 11 and Sept. 18. Lindbergh Field, ext. 491, Bldg. 14 auditorium, second shift, 4:30 p.m., Tuesday, Sept. 12; first shift, 8 a.m., Tuesday, Sept. 19. AF Plant 19, ext. 491, Bldg. 3, 1st mezz., Col. B-14 conference room, 8 a.m., Thursday, Sept. 14.

PROFESSIONAL/TECHNICAL

HI-TEMPERATURE SOLDERING—Several 16-hr. classes will be conducted on soldering procedures using Sb-5 and Sn-10 covering Convair and Fort Worth specs. Classes will begin in September at Lindbergh Field. For information call Dick Forrest, ext. 1931, Kearny Mesa.

DAMAGE PREVENTION — Kearny Mesa, first shift, Tuesdays and Wednesdays, 8-9 and 10-11 a.m., Sept. 5, 6, 12, 13, October 3, 4. Bldg. 17, Room 8. Lindbergh Field, first shift, Wednesdays and Thursdays, 8-9 and 10-11 a.m., Sept. 20, 21, 27, 28, Oct. 11, 12, 18, 19, 25, 26, Nov. 1, 2, 8, 9, 15, 16, Bldg. 14 auditorium. For information call W. F. Weidenfeller, ext. 1931 KM.

PROGRAMMED SELF STUDY—A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Educational service office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

CITY COLLEGE COURSES

Lindbergh Field: Mondays starting on Sept. 11. Introduction to Supervision, 4-7 p.m., Room 8, Bldg. 14. Instructor, Hal Rubin. Registration on first night. For reservations call educational services, ext. 491 LF.

Kearny Mesa: Mondays starting Sept. 11. Industrial Economics for Supervisors, Bldg. 17, Room 1, 4:30-7:30 p.m. Instructor, Donn Olsen. Wednesdays starting Sept. 13. Human Relations "A," Bldg. 17, Room 1, 4:30-7:30 p.m. Instructor, Hal Rubin. Thursdays starting Sept. 14. Introduction to Digital Computers, with emphasis on numbering systems and Boolean algebra. Bldg. 17, Room 2, 5-8 p.m. For information call Dick Forrest, ext. 1931 KM. Registration for all classes at first sessions. For reservations call Diana, educational services, ext. 1931 KM.

Retirements

CONVAIR

GJERSET—Oswald S., Dept. 954-2. Seniority date Aug. 13, 1956, retired Aug. 18.

LOCKE—James L., Dept. 460-0. Seniority date Nov. 2, 1956, retired Aug. 4.

LYNG—Louis O., Dept. 142-1. Seniority date Aug. 23, 1955, retired Aug. 18.

MITCHELL—Louise S., Dept. 524-5. Seniority date March 13, 1956, retired Aug. 18.

SCHWERIN—Walter A., Dept. 731-0. Seniority date Aug. 21, 1958, retired Aug. 10.

Personals

CONVAIR

I wish to express my sincere thanks to all of my friends who so generously thought of me during my illness. God bless all of you.

H. E. Salley, Dept. 149-6.

Births

CONVAIR

WENDELOWSKI — Daughter, Karyn Irene, 8 lbs., 7 oz., born June 28 to Mr. and Mrs. Karl F. Wendelowski, Dept. 966-7.

Deaths

CONVAIR

LAWSON—Lawrence G., Dept. 149-0. Died Aug. 22. Survived by his wife, Mildred; daughter, Mrs. Priscilla Allen; a granddaughter; father; and a sister, all of San Diego.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Communication With Alpha Buoy To Be Tried at Range of 2,500 Miles

Alpha, oceanographic and meterological data-gathering buoy developed by Convair for the Office of Naval Research will have a chance to show how well it can perform over a 2,500-mile radio range this month when the Mobile Data Center sets up long-range high frequency antennas in Washington, D.C.

Signals from the buoy, moored off the Southern California coast, will be monitored for the next two weeks across the cross-country range in a qualitative check of the buoy's radio telemetry systems performance.

"This is our first opportunity to obtain accurate data over this long a range, and our first prototype test over an east-west path," Robert Devereux, ocean data station program manager at Convair, said.

According to Devereux, telemetry systems performance achieved during recently-concluded tests across the north-south path were far beyond expectations. The Mobile Data Center traveled as far north as Seattle, Wash., in July making contact with the buoy at intervals a few hundred miles apart.

In Washington, D.C., the mobile station will interrogate the buoy at least once a day, varying the time to get data at various hours of the day and night during the two-week period from Sept. 11 to Sept. 22.

While the mobile shore station is interrogating the buoy, performance of equipment in the buoy will be monitored simultaneously by the mobile VHF station on Point Loma, on the outskirts of San Diego. Signals also will be monitored by a Navy radio station on the Hawaiian island of Oahu, 2,600 miles from home base at San Diego, and another Navy station at Kodiak, Alaska, also about 2,500 miles from the buoy.

The traveling data station will be driven straight through to the East Coast without a break for contact with the buoy. However, on the way back to San Diego it will set up operations at Fort Worth, Tucson, and Yuma to interrogate the buoy. These points were chosen because they are about 300 miles apart, roughly the same distance from each other as three of the main interrogation sites on the north-south path—Santa Barbara, Alameda in California, and Seattle.

Lou Scott, senior electronics engineer, heads the MDC as task leader. Other members are John Thayer and James Sanders, test engineers, Ted Shelor, senior research engineer, and Lee Bettis, electronics technician.

★ ★ ★

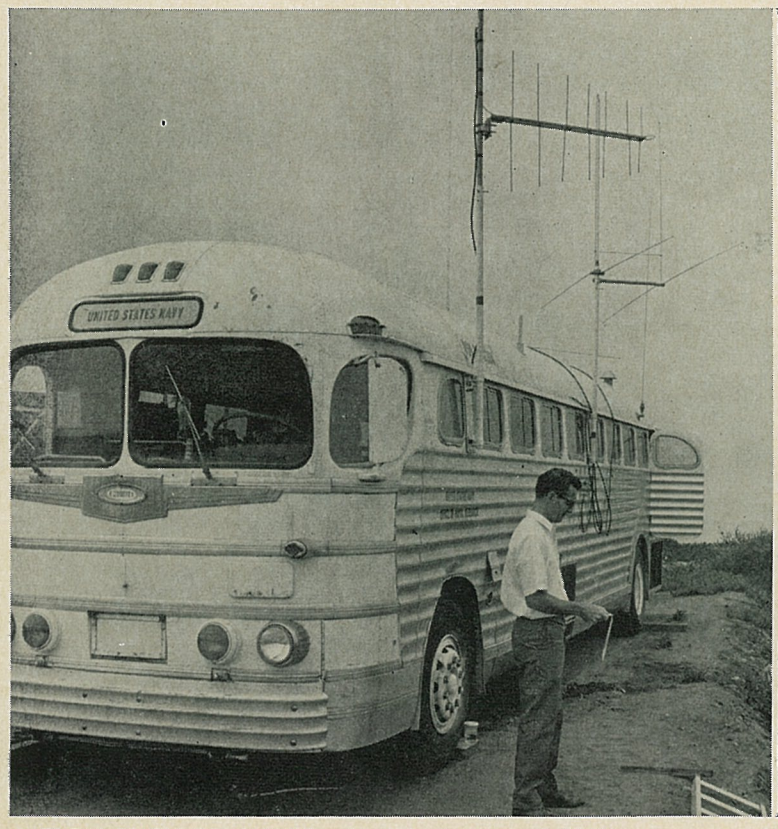
Symposium to Hear Papers on ONR Buoy

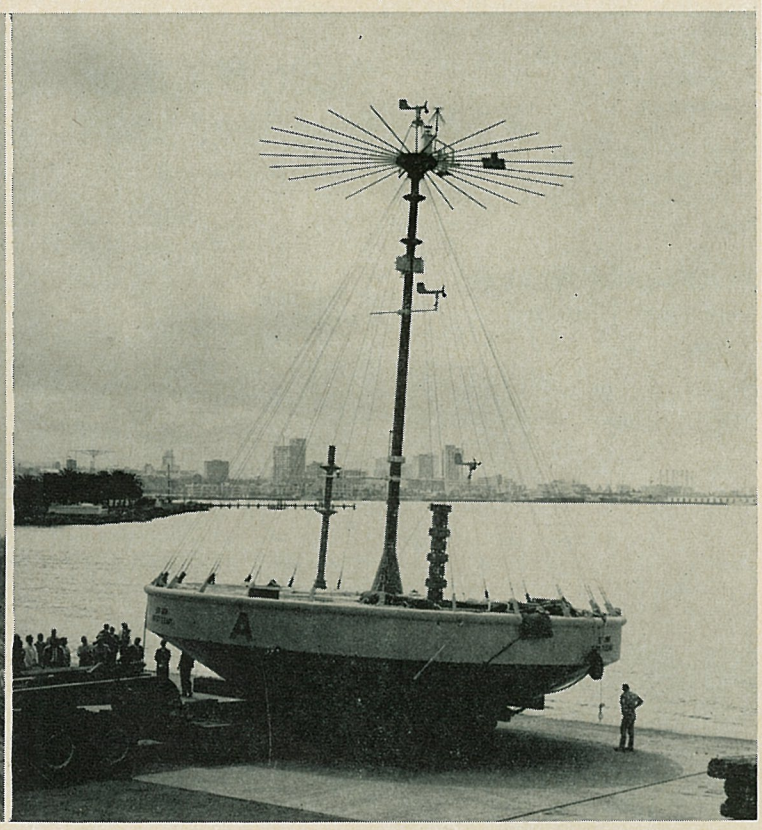
Three papers on the Office of Naval Research data-gathering buoy, developed by Convair, will be presented at the Second International Buoy Technology Symposium in Washington, D.C. this month by members of Convair's ocean data station program.

Papers are: "The Monster Buoy, Its Data Acquisition and Telemetry / Command Systems," by K. A. Morgan, L. A. Scott, and R. F. Devereux; "Long-Range Telemetering from the Monster Buoy," by R. F. Kosic, K. A. Morgan, L. A. Scott, R. F. Devereux; and "Two Experimental Moorings in 13,000 Feet of Water Near Bermuda," by S. T. Uyeda, Kosic, Devereux, and J. H. Nath, associate professor in civil engineering at Colorado State University, acting as a consultant on the buoy program.

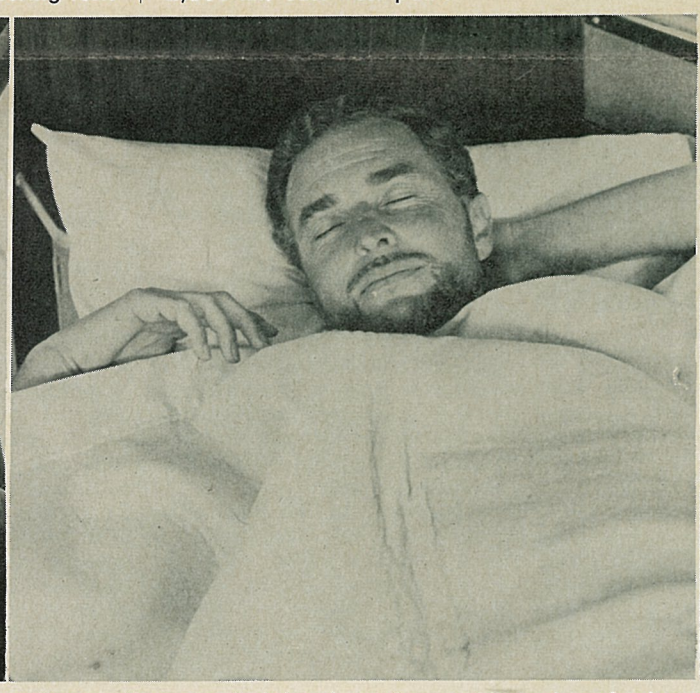
Convair division will have a display at the Symposium on buoys developed for the Office of Naval Research and U.S. Coast Guard. Models of both buoys and actual buoy hardware will be included and actual size and configuration of a buoy hull will be graphically depicted in the exhibit background.

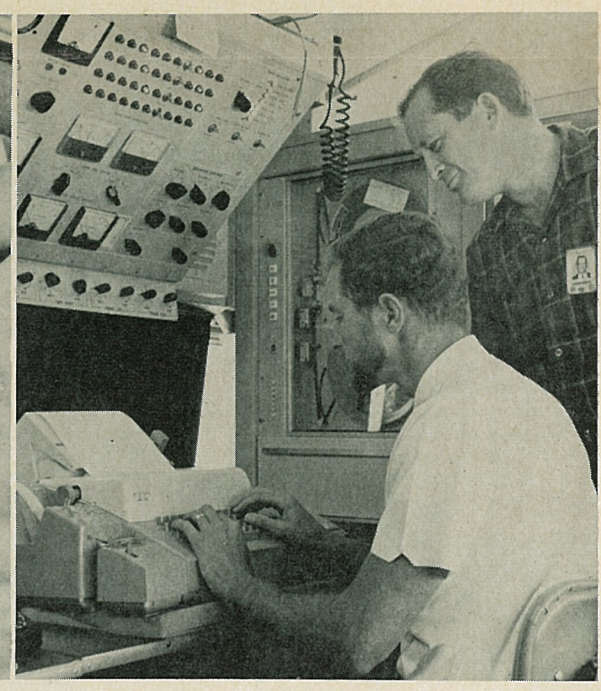
Also, demonstrations will be given in the Mobile Data Center which will be set up and operating on property of the U.S. Naval Observatory in the northwest section of Washington, D.C., between Wisconsin and Massachusetts Avenues.



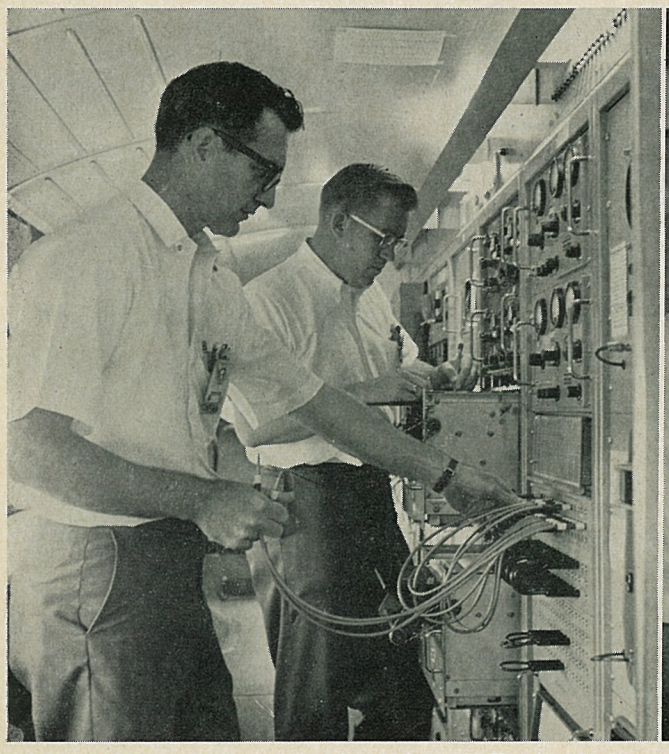


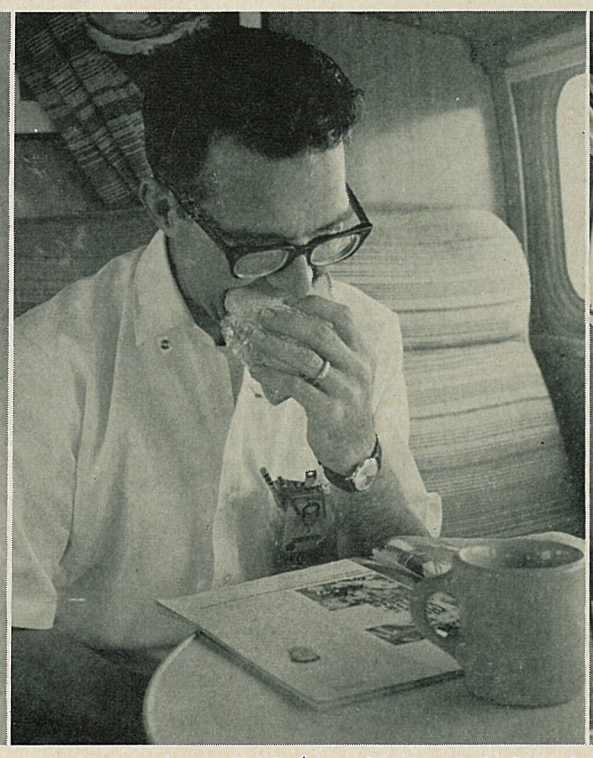
FROM BUOY TO SHORE—At right is shot of ONR's prototype ocean data-gathering buoy Alpha just before launch in San Diego Bay early in June. Buoy now is moored off Southern California coast 12 miles off La Jolla, Calif., for long-range telemetering tests monitored by two data stations — VHF station, at left, parked on Point Loma, Calif., throughout test series, and Mobile Data Center now en route to Washington, D.C., to test range over 2,500-mi. east-west path.

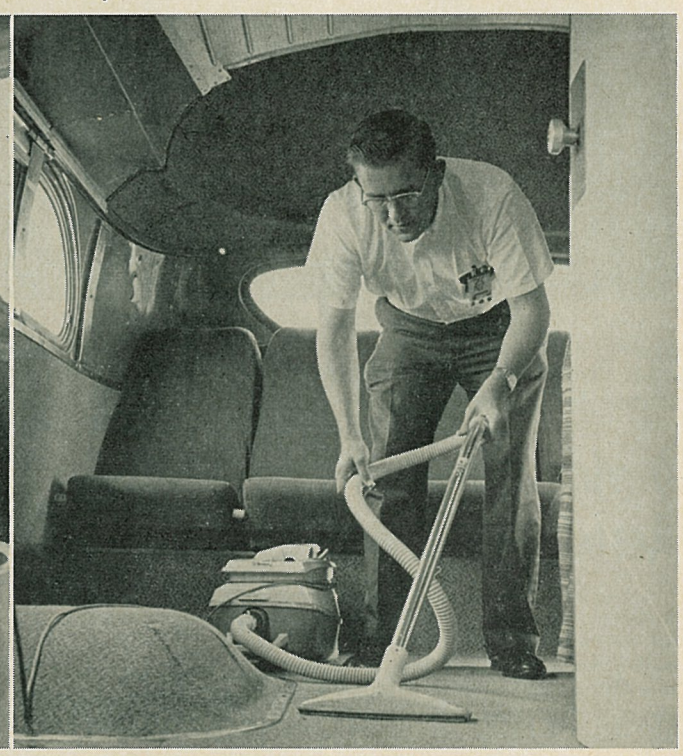




From left: Lou Scott, task leader, wheels Mobile Data Center down road; John Thayer, test engineer, sacks out while off duty; Scott and Thayer in operations area setting up instructions for buoy to be fed into computer before making actual contact with buoy many miles away.







From left: In VHF station, back home, Charles McIntyre, design engineer, and Tom Nilson, test engineer, getting ready to interrogate buoy during daily data-gathering period; McIntyre takes time out for lunch (paper bag type); Nilson puts in some time "policing" interior.

Data Products Plant Renovated At Hancock Street Location

Renovation of Stromberg-Carlson Data Products plant at 1895 Hancock St. in San Diego is nearing completion, according to Roy Dieter, plant engineer.

Major remodeling of the building has been under way since production operations were moved to the El Cajon plant in February of this year.

First floor of the Hancock St. plant has been rearranged for engineering laboratories and additional office space for draftsmen and engineers. The second floor is given over to engineering offices and the third floor to marketing offices. Engineering and research and development labs and office areas are located in the basement.

Dieter also said the realignment of the production area at the El Cajon plant for the latest in mass production techniques will be completed by the middle of October.

Campbell on Board Of Toastmasters

Cy Campbell, Convair design specialist, has been elected to the board of directors of Toastmasters International. His election was announced late last month at the 36th annual convention of Toastmasters in Toronto, Canada.

Campbell was among over 1,000 delegates from the United States and several foreign countries.

He has been a member of the Dynamic Toastmasters Club 457 for 12 years, has held several district offices, and in 1962-63 was governor of District 5.

Car Club Members Selling Tickets

CRA Sports Car Club is joining other San Diego sports car groups in selling tickets for a benefit drawing on a Shelby Mustang G.T. 500 which will go to some lucky person at the annual Concours d'Elegance and International Auto Show Oct. 7.

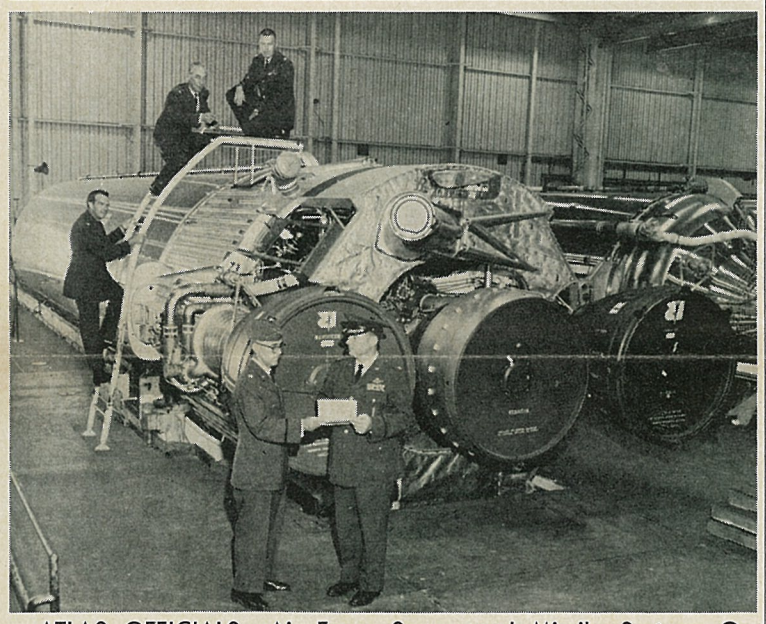
Proceeds of the drawing will go to the Downtown Optimist Club for its youth activities and scholarship fund.

Tickets at $1 may be purchased from any Convair club member.

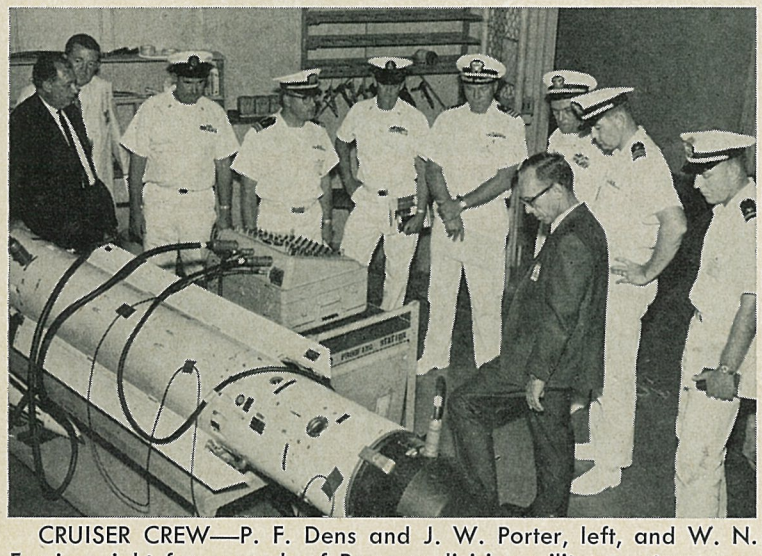
Windshield Sticker Position Limited

General Dynamics motorists in California are advised to check windshield stickers in view of a recently passed State law that limits stickers to a seven-inch space in the lower corner of the windshield farthest from the driver.

Only exceptions are stickers showing Highway Patrol inspection, and Pollution Control certificates.



ATLAS OFFICIALS—Air Force Space and Missile Systems Organization officers with key responsibility for Atlas programs are shown inspecting booster during visit to Convair's Kearny Mesa plant for monthly program management review. Col. Leo W. Sullivan, right, director of Atlas/Athena program office and deputy for launch vehicles, is conferring with Maj. Jack Lee, chief of program control. On ladder, left to right, are Maj. James Dade, chief of operations engineering; Maj. Walter Wenberg, chief of configuration, and Maj. William Voegtlei, chief of procurement.



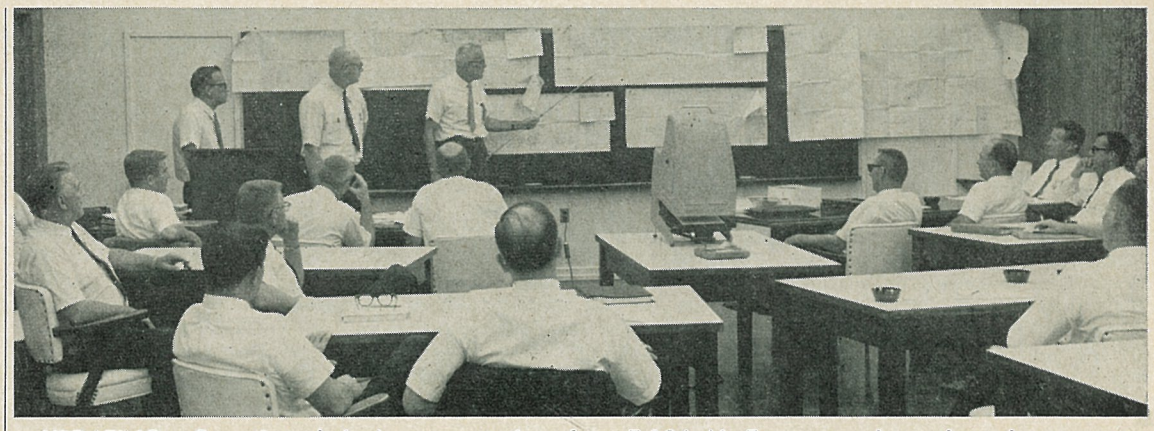
CRUISER CREW—P. F. Dens and J. W. Porter, left, and W. N. Frazier, right foreground, of Pomona division military systems support, demonstrate missile test equipment for group from USS Canberra, Terrier-armed cruiser.

Device Invented For Redeye Aerodynamic Roll Control

C. C. Durand Jr., development project engineer, is inventor of an aerodynamic roll control mechanism being used on the Redeye missile being produced at Pomona division for the U.S. Army and Marine Corps.

Patent 3,333,790 on the roll control mechanism was issued last month. Application for the patent had been filed Dec. 2, 1964, but security regulations precluded earlier public issuance.

Durand's mechanism contrasts with prior devices in that it provides aerodynamic roll control without the need for supporting electronic, electrical or mechanical elements and circuitry.



UPDATING—Convair technical representatives from F-106 Air Force squadrons throughout country receive up-to-date information on F-106 modifications at San Diego plant. Standing, from left, are Roy Sommers, chief of service engineering and field service; Dave Houtz and Wally Fenton, who coordinated instruction.

Cyclists Will Travel Down Silver Strand

Convairiders will cycle down Silver Strand and back this coming Saturday, Sept. 9, in their first ride of the month.

Bicyclists will meet at 9 a.m. at the ferry landing on the Coronado side.

Joe Olander will lead the 25-mile ride. He may be reached at ext. 3045 KM, or home phone, 273-0791.

Sunday short rides of the club will be made through the Kearny Mesa area this month for a change of scenery. Starting place will be at CRA Clubhouse, Kearny Mesa, at 2 p.m. each Sunday in September.

Seminar Scheduled At Flight Center

George R. Shumway, a group engineer in Convair's engineering data control Dept. 565-2, will be among speakers at a configuration management seminar for systems management personnel to be held Oct. 19 and 20 at NASA's Marshall Space Flight Center in Huntsville, Ala.

He will discuss vendor control as it relates to configuration management, data management, data traceability systems and use of computers and other applications. The seminar will be sponsored by the Huntsville chapter of the American Society of Tool and Manufacturing Engineers.

Registration Dates For Colleges Near

General Dynamics people intending to return to school this fall are reminded that registration dates for colleges and universities in the San Diego area are drawing near.

Registration at San Diego State College is Sept. 13; California Western University, Sept. 16; University of California at San Diego, Sept. 25-29.

Convair people who wish to qualify for a tuition refund through the company must notify educational services offices at Kearny Mesa within three weeks after starting date of classes.

Aquaweek Booster Pins Are on Sale

Booster pins for San Diego's Aquaweek, Sept. 17 through Sept. 24, are available at all employe services outlets for $1 each. Sale of the pins supports the sports spectacular in Mission Bay Park. Events include qualification of hydroplanes, Navy demolition exhibition, AquaQueen contest, Fiesta ball, square dance fiesta, boat show, carnival, aquatic competitions, acrobatic skiing, folk singing.

Floral Association Elects V. H. Schade

Virgil H. Schade of Convair Dept. 031, and member of the Convair Garden Club, has been elected president of the San Diego Floral Association. He also serves as president of the San Diego Botanical Garden Foundation. Schade has been active in garden circles for some 20 years and has one of the largest orchid gardens of any hobbyist in the area.

Tech Reps Based With F-106 Units Meet at San Diego for Briefings

Convair technical representatives based with F-106-equipped squadrons at 18 Air Force bases throughout the United States gathered at the San Diego plant last month for an indoctrination on new F-106 modifications.

During the three-day updating program held Aug. 23-25 at Lindbergh Field plant they received latest information on major modifications going into the F-106. These include air-to-air refueling, supersonic tanks, closed cycle cooling system, multi-mode storage tube, UHF-TACAN.

The tech reps brought together represented over 500 years of aircraft experience and nearly 250 years of technical representative duty in the field, R. E. Sommers, chief of service engineering and field service, pointed out.

Convair now maintains 27 service reps at F-102 and F-106 bases. Of these, 20 are assigned to support F-106 squadrons.

Attending the indoctrination were C. C. Broadwater, Tyndall AFB, Fla.; J. W. Day, Paine AFB, Wash.; C. H. Duffell, Castle AFB, Calif.; L. M. Goodloe, Langley AFB, Va.; E. M. Gross, Holloman AFB, N.M.; R. L. Hart, Richards-Gebaur AFB, Mo.; L. R. Holz, Hamilton AFB, Calif.; C. H. Marier, Duluth AFB, Minn; R. L. Matthews, Loring AFB, Me.; W. H. Moffett, Kincheloe AFB, Mich.; J. C. Morris, Stewart AFB, N.Y.; Floyd Pratt, Selfridge AFB, Mich.; E. T. Schaechterle, McChord AFB, Wash.; G. S. Schendel, Ent AFB, Col.; C. W. Stevens, Richards-Gebaur AFB, Mo.; J. F. Sylvia, McClellan AFB, Calif.; J. L. Tezak, Gunter AFB, Ala; F. H. Weaver, Dover AFB, Del.

Only ones not able to be present were W. R. Boughey based at Minot AFB, N.D., and V. L. Weese, headquartered at SAAMA, Kelly AFB, Texas.

Club to Watch Demonstration

Convair Management Club members will see a demonstration of latest management information equipment as well as learn the steps in development of sound transmission at the Sept. 20 dinner meeting when the Pacific Telephone Co. and IBM join in presenting the program.

Jack Mayer of Pacific Telephone will give the novel and entertaining presentation, "Adventure in Sound," which traces sound transmission from the first recording of a telephone call in 1876 to present-day stereophonic sound.

During the IBM section of the program, Jim McKeever of the Los Angeles district office will show how the management information system, MIDAS, operates. There will be a hookup from an IBM 1050 data communication terminal at the meeting place to a computer in Los Angeles. Management problems will be introduced into the computer tie-in. The audience will be able to participate.

Dinner will be in the KM plant dining room for less than $2.00.

Tickets will be on sale by Boosters at all plant locations.

Hi-Fi Studio Well Equipped

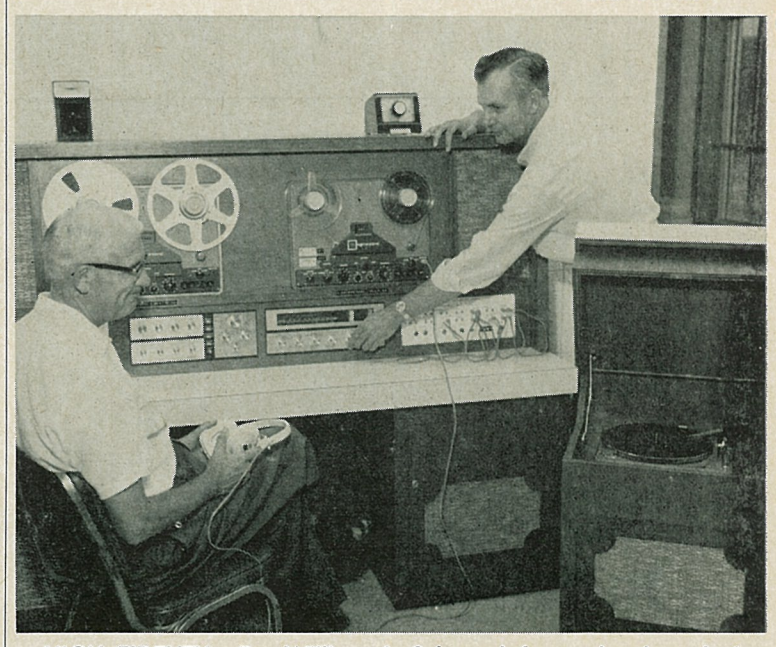
CRA Hi-Fi Club members have opportunity to use some of the finest equipment available for transcribing records to tape, duplicating tapes, recording from FM broadcasts or just plain listening.

The club has studios in CRA Clubhouse and has microphones for live recording, a library of fine selections and a completely equipped workshop for building, testing and repairing electronic equipment.

Meetings are held at 7:30 p.m. the second Tuesday each month and guests are invited.

A special showing of color movies with sound from Starlight Opera productions "Little Me" and "South Pacific" are scheduled at next Tuesday's meeting (Sept. 12).

Films will be presented by J. Howard Stein, a member of the Starlight board. C. L. Cozzens, Hi-Fi Club president, had the lead role in "South Pacific."



HIGH FIDELITY—Dr. William J. Schart, left, newly elected vice president of CRA Hi-Fi Club, and C. L. Cozzens, president, discuss club's studio control console. Employes are invited to join club and use facilities.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Sept. 12. Call ext. 1071 LF or ext. 3322 KM.)

* * *

ADVENTURERS—Vacation slide showing by members at Sept. 20 meeting, 7:30 p.m., CRA Clubhouse.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BALLROOM DANCING—New classes start Sept. 11, CRA Clubhouse. Beginners at 7 p.m.; intermediates at 8:45 p.m. Call Royce Riggan, ext. 1018 LF.

BICYCLE CLUB—25-mile ride on Silver Strand Sept. 9. Meet at 9 a.m. on Coronado side of ferry. Ride to Oceanside Sept. 23.

BOWLING — Sign now for winter leagues. Call Mike Brooks, ext. 1985 LF, or Jim Hayman, ext. 581 LF.

BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.

CAMERA CLUB—Family picnic, CRA Missile Park, Sept. 17.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS — Meeting Sept. 20, 7:30 p.m., Convair cafeteria, Lindbergh Field.

DELTA DIVERS — Spearfishing dive Sept. 10, 9 a.m., Casa de Manana, La Jolla.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING—Potluck and meeting Sept. 19.

GARDEN CLUB — Meeting Sept. 6, 7:30 p.m., Floral Association Bldg.

GOLF—Sign until Sept. 18 for CRA tourney at Chula Vista, Sept. 30-Oct. 1. Call ext. 1111 KM.

HEALTH CLUB—Physical fitness program for all ages in CRA Clubhouse, Kearny Mesa. Open 9:30 a.m. to 10 p.m., Mondays through Fridays; 10 a.m. to 5 p.m. Saturdays. Call ext. 1111 KM.

HI-FI/MUSIC—Meeting Sept. 12, 7:30 p.m., CRA Clubhouse.

ICE SKATING—Autumn weekend to Big Bear Sept. 15-17. General Dynamics skate night every Thursday, 6:15-7:45 p.m. Mission Valley Ice Arena.

PISTOL CLUB—Club shoot Sept. 10, 9:15 a.m., SD Police Pistol Range.

RADIO CLUB—Tour of Miramar NAS radar facilities Sept. 7. Call Alex Halyburton, ext. 1846 KM.

RIDING CLUB—Meeting Sept. 13, 7:30 p.m., CRA Clubhouse. Open fun show, CRA horse ring, Sept. 17, 8:30 a.m.

RIFLE CLUB—Senior shoot Sept. 13, 7:30 p.m. Junior shoot Sept. 16, 8 a.m., Gillespie Field range.

ROCKHOUNDS — Lapidary workshops at Kearny Mesa Clubhouse and Gillespie Field reopen this week. First fall meeting Sept. 13, 7:30 p.m., CRA Clubhouse.

ROLLER SKATING—Free skate night Sept. 18 at Skateland, Front and G Sts. Tickets at employe services outlets.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SERRA MESA TOASTMISTRESS CLUB — Meets first and third Tuesday mornings, 7 a.m., Convair executive dining room, Kearny Mesa. Call Beth Underkofler, ext. 1718 KM.

SKI CLUB—Water skiing after work Thursdays, 5:30 p.m.; Saturdays and Sundays, 9 a.m., Crown Point. Call Harry Eastman, 274-4982.

SPORTS CAR CLUB—Meeting Sept. 13, 7:30 p.m., Convair executive dining room, LF.

SQUARE DANCING—New beginners class starts Sept. 12, 8-10 p.m., CRA Clubhouse. Dynamic Eights dance every Thursday, 8-10 p.m.

STAMP CLUB — Trading night Sept. 14, 7 p.m., Room A, CRA Clubhouse.

SWIMMING—Family swim night Sept. 16, 7-9 p.m., Mission Beach Plunge. Tickets at employe services.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TROPICAL FISH—Meeting Sept. 11, 7:30 p.m., CRA Clubhouse.

WIVES — Luncheon Sept. 20, Hanelei Motel Restaurant.

WOMEN'S GOLF — Tourney Sept. 9 at San Carlos.

Sept. 22 Last Date For Vegas Weekend

Reservations close Sept. 22 for the CRA-sponsored trip to Las Vegas scheduled for the weekend of Sept. 29-Oct. 1.

No refunds will be made after the deadline date.

Reservations can be made by calling Inez at CRA Headquarters, ext. 1111 KM. The entire cost of $36 a person must be paid at the time reservations are picked up at the CRA Clubhouse.

Chartered bus will leave the CRA Clubhouse at 5:15 p.m. on Friday, Sept. 29, and return Sunday evening.

General Dynamics people will be booked into the Aladdin Hotel on the "strip."

The package deal includes round-trip transportation, hotel accommodations, buffet breakfast and cocktails at the hotel and a book of coupons for downtown Las Vegas.

Piloting Course To Begin Sept. 12

A 13-week United States Power Squadron course in elementary piloting for Convair employes and members of their families and friends from 5 to 7 p.m. Tuesdays will begin next week (Sept. 12) in CRA Clubhouse.

The free, non-technical classes will cover safety afloat, seamanship, rules of the road, customs, compass and charting. Textbooks and other needed materials will be available for purchase at class sessions.

Additional information can be obtained by calling Lee Schenke, class chairman, ext. 2889 KM.

Radio Club Members Plan Miramar Tour

Members of the CRA Amateur Radio Club and guests will tour radar facilities at Miramar Naval Air Station at 7:30 p.m. tomorrow (Sept. 7).

Those planning to attend have been asked to phone Alex J. Halyburton, ext. 1846 KM. The tour will take the place of the club's regular meeting and the group will meet at the Miramar gate and be escorted from there.

Plans for other tours will be discussed at the club's next meeting at 7:30 p.m., Sept. 21, in the CRA Clubhouse.

Call CRA For Golf Starting Times

Starting times for CRA's next links tournament, Sept. 30-Oct. 1, at Chula Vista course will be assigned from tomorrow (Sept. 7) to Sept. 18.

Call CRA Headquarters, ext. 1111, KM.

Convair Gardeners Win Many Trophies

CRA Garden Club entries in Southern California dahlia shows held during the last month won trophies and ribbons in at least half a dozen shows.

Mr. and Mrs. Charles Splinter, Mr. and Mrs. Albert Hornby, Mr. and Mrs. Arnold Carroll, and Mr. and Mrs. Henry Boyd won 37 trophies and over 200 blue ribbons in shows at San Diego, Santa Ana, Long Beach, Inglewood, and Bakersfield.

A full report on the shows and awards won by members will be made at the Sept. 6 club meeting, 7:30 p.m., in the Floral Association Bldg., Balboa Park.

The first of a series of lessons in corsage making will be given at the meeting. Everyone attending will actually make a corsage under expert instruction.

Riding Club Show Draws 100 Entries

CRA Riding Club's two-day horse show last month drew 100 individual entries each day and probably 500 spectators altogether to view the equitation and gymkhana contests.

Convair horsemen will meet Sept. 13, 7:30 p.m., at CRA Clubhouse. Next riding activity will be an open fun show at the CRA horse arena on Sept. 17, starting at 8:30 a.m.

BODY BUILDING—Ralph Mansfield, left, CRA Health Club director, starts group of Convair and DCAS employes on lunch hour physical fitness workout. Running, from left, are R. C. Christopher, Fred Minter, John Martinez, H. I. Bellis, Ad Mosco, Bill Walker, Dave Mathews, F. L. Patton and R. J. Cook.

New Ballroom Classes Start

New ballroom dancing classes start Sept. 11 for General Dynamics people who want to be proficient by the time the holiday season arrives.

Registration will be accepted at the first two class sessions in the CRA Clubhouse auditorium, according to CRA Commissioner Royce Riggan.

The beginning class meets at 7 p.m. and the intermediate class at 8:45.

Both will meet Monday nights for 12 weeks. Cost of either is $18 a couple.

Beginners learn basic ballroom dancing steps. Intermediates progress to popular American and Latin dances, including the fox trot, waltz, swing, cha-cha, rhumba, samba, and tango. Those signing for the intermediate class should have completed basic instruction.

Bob McGlade, professional instructor, will teach both classes.

For information call Riggan, ext. 1018 LF.

LaNois Will Head CRA Stamp Club

Hayden E. LaNois will head the reactivated CRA Stamp Club as president following election of officers last month.

Other officers are H. D. Van Wagner, vice president, and John Mooney, secretary-treasurer.

Two meetings will be held each month, CRA Commissioner Art King said. A trading night will be held the second Thursday of the month and a trading and auction night on the fourth Thursday. Both will be held at 7 p.m. in Room A of CRA Clubhouse, Kearny Mesa. Meetings this month will be Sept. 14 and Sept. 28.

Stamp Club members are making every effort to encourage young people in stamp collecting as a hobby. Members will assist Convair sons and daughters who are interested and will act as sponsors for Boy Scouts and Girl Scouts who wish to earn merit badges for stamp collecting.

It's Healthy

Regular Running Recommended As Vigorous Way to Keep Fit

Convair men are "running for their health" during noon and evening hours at the CRA Health Club and adjacent Missile Park grounds.

Ralph Mansfield, Health Club director, said about 100 are running daily. About 30 run during the noon hour, including several who skip lunch to reduce weight and get in mileage.

"Statistics indicate those who participate in vigorous exercise like running are less susceptible to heart disease," Mansfield said. "Running is excellent for weight reducing, improving the circulatory system, building endurance and stamina, and improving breathing."

Employes and family members running regularly at the club range in age from 12 to 60 and run 5 to 25 miles per week.

Beginners start by running about 3/10-mile on a treadmill inside the club. They "graduate" to a half-mile run outside, then gradually increase distance.

The Health Club is open from 9:30 a.m. to 10 p.m. Monday through Friday and 10 a.m. to 5 p.m. Saturday. Weights, vibrators, exercycles and other health aids are available and the club has sauna facilities for both men and women.

Annual Health Club memberships are $18 for employes and $27 for families with six-month trial membership available at $12 for employes and $18 for families.

Lockers may be used during exercise periods without charge or may be leased for full-time use for $6 per year.

Zorrilla Is Winner In Abalone Race

Jorge Zorrilla led 20 other Delta Divers in the abalone race late last month by bringing his catch into the staging area in 32 minutes, 7 minutes ahead of his nearest competitor, Frank Whitton.

The divers had to start with a 200-yd. run on La Jolla Shores beach, then swim 400 yards to the abalone ground, get five legal size abalones, and return to the starting point.

Herb Boynton, Mike Griffith, and John Phair came in third, fourth, and fifth.

Next event will be a spearfishing dive Sept. 10, 9 a.m., from Casa de Manana, La Jolla.

Silver Goblets Show Prizes

All CRA riders taking part in a fun show Sunday, Sept. 17, at the CRA horse ring will have a chance at top prizes of silver goblets which will be given in drawings after both morning and afternoon events.

The drawings replace high-point prizes for gymkhana and equitation. However, trophies will go to first place in each of the 10 classes of both contests and ribbons through 10th place in the junior division and through sixth for open and adult division.

Gymkhana contests will be held in the morning, beginning at 8:30 a.m. Equitation classes will be in the afternoon. Entry fee is 75 cents per class for each individual.

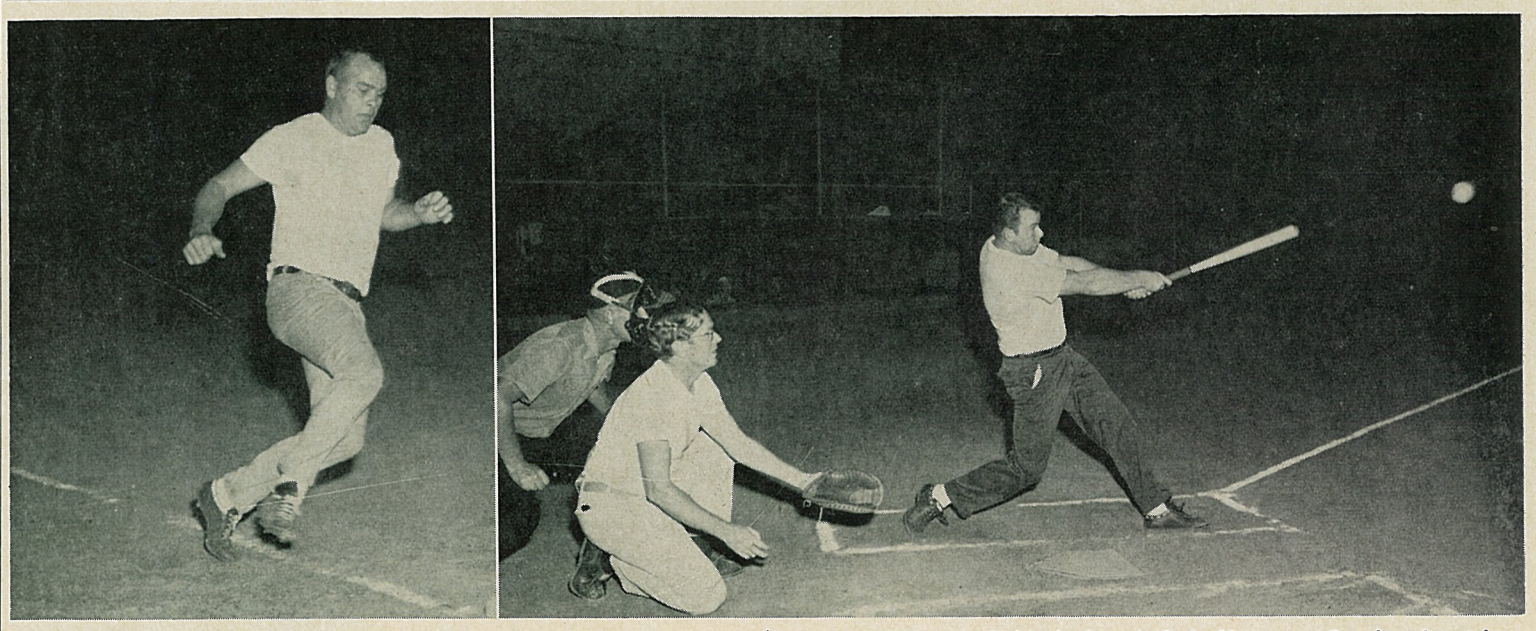
Judy Watson and Clyde Donahoo will share show manager's duties. For information call Mrs. Watson at 277-0798 or Donahoo at 277-0371 or ext. 221 KM.

Former show manager, Boyd Spencley, has been assigned to Fort Worth division for the next year. He and his wife were feted by Riding Club members at a dinner-dance Aug. 26 at the Miramar NAS Officers Club.

Tickets to Charger Game Go on Sale

Reserved seats to the first league Charger game this Saturday, Sept. 9, with Boston may be purchased at all ticket outlets until end of the day shift tomorrow, Sept. 7.

Tickets are $4.50 and $6.



LEAGUE PLAY-OFF—At left, Electronics' Jack Kelley rounds first on way to score after hitting home run in seventh inning for Bombers to win American League slow pitch play-off with Stromberg-Carlson, 13-11. In photo at right, S-C's Skip Bowman knocks out a good one. Behind plate is Bob Sisemore, Bombers' catcher, and Umpire Harry Van Buren. Bombers went on to play a two-out-of-three series with Pylons for CRA tourney title. Games were played at CRA Missile Park.

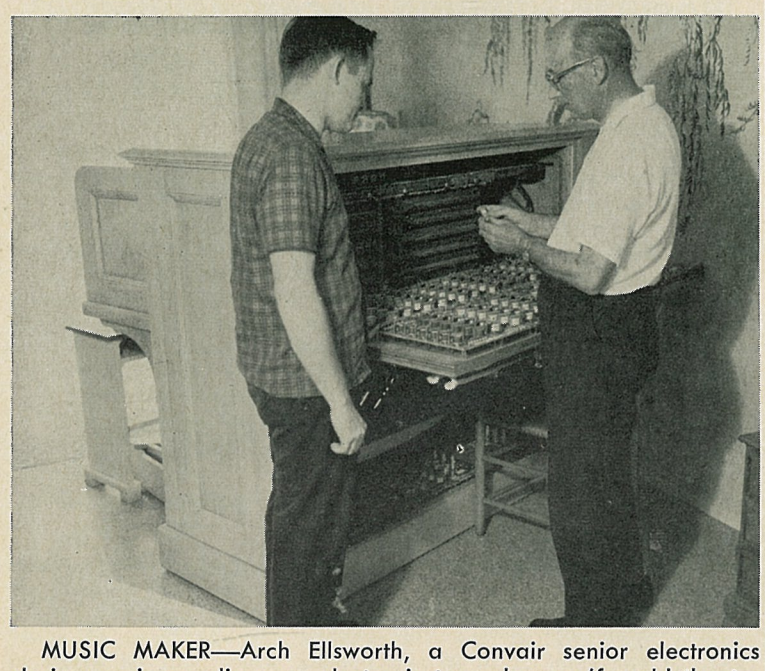
People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

CHARLES MASSEY, formerly chief of management support and new business coordination at Fort Worth division, has been appointed manager of financial analysis-government at Corporate Headquarters. He reports to **D. L. THOMAS,** assistant comptroller and manager of budgets-forecasts.

FRANK M. WAITKUS (1957) from Convair division to Stromberg-Carlson, Rochester as assistant to manager of production control; **SAMUEL L. BARONE** (1956) from Electronics, Rochester to senior engineer, Stromberg-Carlson, Rochester; **OMAR L. CUNNINGHAM JR.** (1960) from Convair (Vandenberg AFB) to Stromberg-Carlson Data Products as senior design engineer; **EDWIN SCHLATTER** (1961) from Convair to General Atomic; **CHARLES H. COLEMAN** (1960) from Electric Boat to design engineer, Electronics, San Diego; **ROLAND T. FORD** (1966) from General Dynamics/Limited, England to Stromberg-Carlson Data Products as senior customer engineer; **ROBERT V. SHIELDS** (1953) from Canadair Limited to engineering staff specialist, Convair.



MUSIC MAKER—Arch Ellsworth, a Convair senior electronics design engineer, discusses electronic tone shapers (for old theater organ he has refurbished) with his son-in-law, Gilbert Herlich of Electronics-SD. Music for organ will be piped to 32 speakers in Ellsworth home.

Beautiful Music

Venerable Pipe Organ Restored, Gets Electronic 'Lease on Life'

An old pipe organ that made beautiful music for more than 50 years in the Empire Theater in Newark, N. J., has been given a new and all-solid-state electronic lease on life in the Santee home of Arch Ellsworth, a senior electronics design engineer in Convair's Dept. 988-4.

An "organ buff" for years, Ellsworth learned of the old console being for sale in 1965 after his son-in-law, Gilbert Herlich, an Electronics-SD senior design engineer, saw it advertised on a bulletin board in Plainfield, N. J.

Ellsworth paid $100 for the black and broken-down console, had it shipped to San Diego by van, and has since spent $3,000 and hundreds of hours refurbishing and rebuilding it.

He designed and built 275 electronic oscillators that, with 35 electronic tone shapers, generate the basic tones and different "voices" which can be coupled to the four basic divisions of the organ through 25 coupler switches with 1,588 contacts. The oscillators and tone shapers replaced the pipes in the old organ.

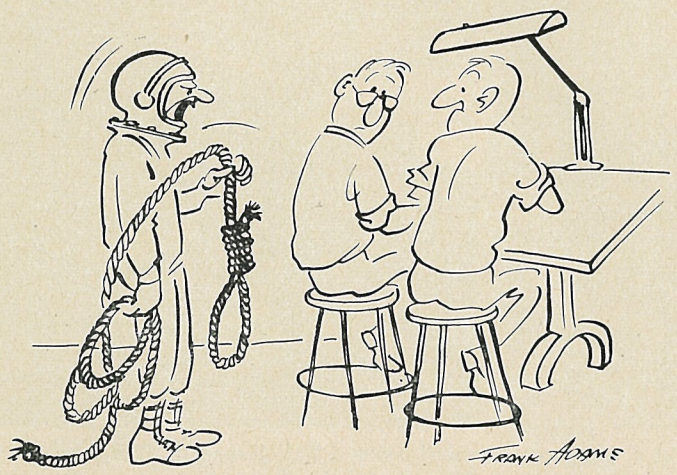
The console has been refinished in antique ivory exterior and natural mahogany interior.

It has a 32-note pedal clavier, three 61-note manuals and 62 stops on its horseshoe-shaped stopboard. Electronically operated switches control the output from the tone shapers for sound production. Four 50-watt amplifier channels will feed 32 speakers throughout the home when all have been installed.

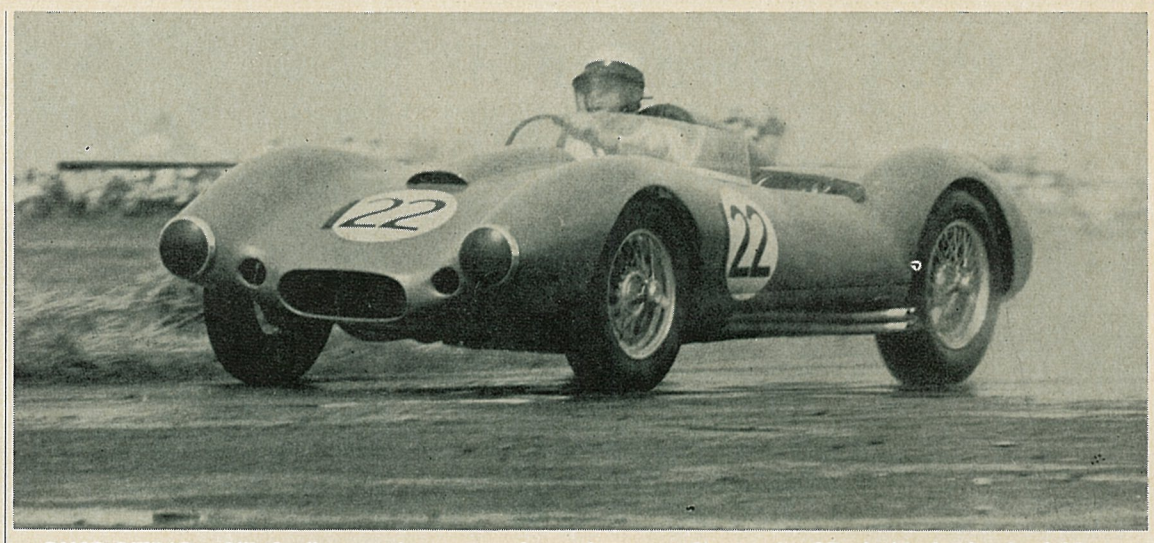
Although he designed an organ 10 years ago, this was the first Ellsworth has rebuilt. He "boned up" on technical requirements by reading books from the public library and three original manuals that came with the organ.

Ellsworth has been playing the violin professionally and as an amateur for years. He had his own dance orchestra at the University of Alabama in the '30s, and now plays with the Grossmont Junior College Community Orchestra.

But he has a problem! He's a rank amateur when it comes to playing an organ and he's given himself a year to become an expert.



"Which one of you bright boys came up with *this* idea for a walk in space?"



DUST BITING—Bill Sadler, senior research engineer at Electronics-SD, behind wheel of his own design racing car, MK II, during his racing days.

Straightaway at 180 mph

Former Race Driver, Auto Designer Says There's No Thrill to Touch it

A sports car driver who designed and built the first rear engine sports car and operated his own car manufacturing business has joined Electronics operations in San Diego as a senior research engineer.

It hasn't been too long since Bill Sadler spun one of his own-design cars around a curve in a road race. His last design, MK V, the first sports car ever built with a rear engine, was built in the spring of 1961 and competed in several races that year.

"There is nothing in the world as exciting as going down a straightaway at 180 miles an hour, waiting until the last split second before changing gears to take the turn, then pulling out just ahead of the next car," Sadler said as he recalled the 10 years he spent building and racing cars.

Sadler grew up working on cars. He became a licensed auto mechanic in his teens while working in his father's garage in the south Ontario town of St. Catherines. It was in the early 1950s that he started designing his own.

"My first car, the Sadler's Special, was built with a tubular chassis and fiber glass body, powered with a Jowett Javelin engine," he said. "It was light and held the road well. I won several local races during the year I played around with it as a hobby."

In 1957 he designed a heavier version, the Sadler MK II, with unique features, including a preselective gear box and low pivot swing axle rear suspension.

About this time he went to England to devote full time to sports car racing.

He spent nearly a year racing in all the English national road races.

Biggest thrill was the 100 pounds he won for fastest time of the day in the Brighton Speed trials.

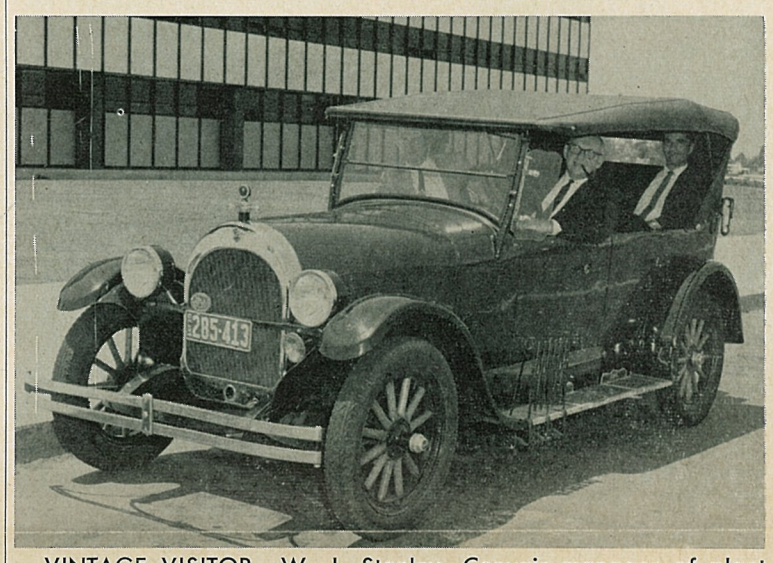
He went back to Ontario after a whirl at Nassau Speed Week, one of the largest international races, in which his car won the Governor's Trophy. From 1958 to 1961 he designed and supervised the building of 30 cars to order. They were priced at around $9,000 apiece, although his smaller Formula Junior single-seaters, powered with Austin-Healey Sprite engines, sold for $3,000.

"After several years of total involvement in racing I decided that I was building up too many frustrations by feeling too keenly about the treatment of each of my cars, so I decided to cut loose."

He went back to the electronics business and continued his education with a BS from Indiana Tri-State College and then a master's in electrical engineering from Massachusetts Institute of Technology a year ago. He came to Electronics from Sperry Phoenix Co.

Asked if he ever thought of getting back into racing, Sadler answered, "Yes, I really think I'd like to again, but on a limited for-fun basis. My wife is not too happy with my flying (Sadler now owns a four-seater Bonanza and pilots it cross-country) and thinks I'd be safer on the ground, even in a racer!"

Is it news? Pick up a phone and call GD/NEWS



VINTAGE VISITOR—W. J. Stanley, Convair manager of plant engineering, drives 1924 Oldsmobile sports touring car believed to be only one of its kind. Passengers are Richard Leonard, left, of Dept. 250-2, and Ray V. Redel, who found and restored vehicle. Redel, electrical contractor who has done considerable work for Convair division, said car cruises at 50 mph and gets more than 20 miles to the gallon.

Numberless Auto License Plate Bears Only 'Pomona' and 'Mass.'

G. E. Duncan, Pomona division Dept. 6, returned recently from an assignment in Massachusetts with a unique license plate that has created quite a stir in this community.

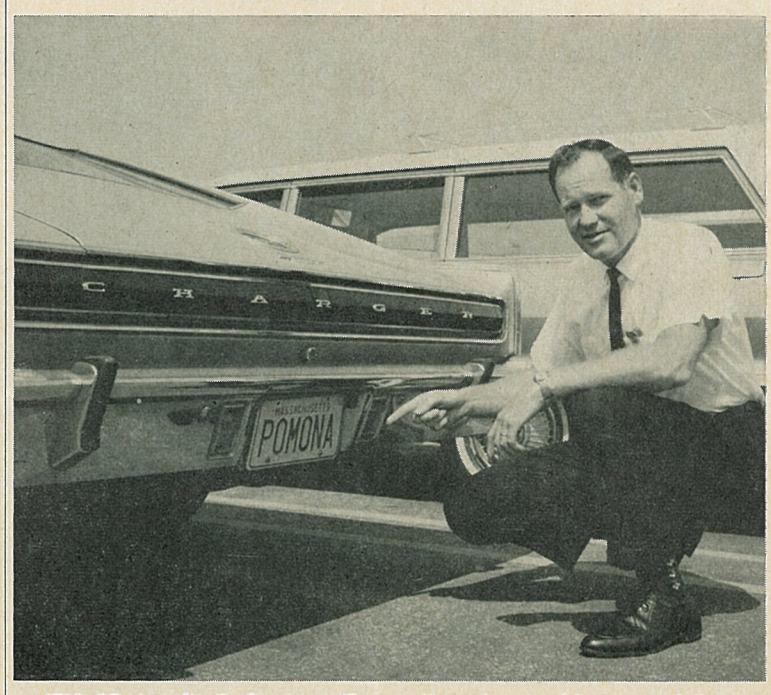
"It's genuine, but it is getting all kinds of comment," Duncan said.

His license plate may be seen in engineering parking lot with only the lettering "Pomona" and the name of the state, Massachusetts.

Last week a son, Greg, took the car on an errand and a stranger drove up beside him and commented, "Man! Where did you get that crazy license plate?"

Earlier, his wife, June, had been stopped on the San Bernardino Freeway by a highway patrolman "just to question the license" and that incident resulted in an interesting half-hour conversation.

"For a $9 fee it's quite acceptable to buy the 'vanity' plates in Massachusetts," Duncan explained. He hopes to be able to use it until the end of the year.



IT'S REAL—G. E. Duncan (Dept. 6), points to his unusual license plate which is creating quite a stir in Pomona division's parking lot.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 19 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, September 20, 1967

PERFORMANCE HONORS—Jack L. Bowers, far left, Convair general manager, presents Sustained Performance Award to Gerald E. Nuss, supervisor, for Dept. 420 at Kearny Mesa. Photos at center and right are of Dept. 001 and 518 people during award presentation. Bowers presented awards to H. B. Day for Dept. 518 and G. K. Cox for Dept. 001. Departments were three of four winning awards for first half of year. (Story on page 2.)

CRAFTSMEN—Typical of Craftsmanship Achievement winners at Convair is electronic data processing group, Dept. 979-6, at Eastern Test Range, which together with materials group, Dept. 979-3, won honors for second quarter. K. E. Newton, manager of Convair ETR base operations, left, presented awards. R. D. Beasley, chief of financial control/operations support, accepted on behalf of winning groups.

FACI Team Commended For Top Performance

Convair's second Outstanding Performance Award plaque has been presented to the division's team responsible for the Atlas SLV-3A first article configuration inspection (FACI).

The award was presented by Jack L. Bowers, Convair general manager, in ceremonies attended by members of the team Sept. 5 at Kearny Mesa. Joseph W. Coddou, production program manager for the SLV-3A, accepted in behalf of the team.

No significant discrepancies were found during the two-day FACI inspection conducted July 27 and 28 by about 100 representatives of the Air Force Space and Missile Systems Organization, NASA, Aerospace Corp., Defense Contract Administration Services plant representative's office and Convair.

Bowers told the team members he wanted "to take this opportunity to indicate my extreme pleasure" with the FACI performance and to express appreciation for their having "contributed so ably."

The Convair manager noted that their achievement gave evidence of "a lot of teamwork" and showed a "percentage of improvement that just can't be measured."

(Continued on Page 2)

High Accuracy Achieved by Atlas-Centaur

Convair's Atlas-Centaur 13 established a new record for accuracy by starting NASA's Surveyor 5 on its flight to the moon Sept. 8 with such precision it would have landed within 25 nautical miles of its target with no midcourse correction.

Because of this accuracy, only about 1 per cent of the Surveyor's midcourse correction capability was required.

Convair's first longer and more powerful Atlas SLV-3C was booster for the mission, which marked the 35th consecutive successful Atlas space launch vehicle flight and maintained 100 per cent success for operational Centaur missions.

A clear sky gave onlookers at Hangar H at Cape Kennedy a "spectacular view" of the Atlas staging, Atlas-Centaur separation and first burn of the Centaur's main engines following the liftoff at 3:57 a.m. Eastern time.

E. E. Barringer, AC-13 project engineer, said the launch countdown proceeded smoothly and all

(Continued on Page 2)

Research Contracts Continue Build Up

Fourteen new research and development contracts totaling $1,095,705 has been received by Convair division during the past three months — bringing the total number of such contracts for this year to 35 with a value of $3,793,524.

The contracts cover a wide scope of activity, ranging from an interplanetary navigation computer specifications study to development of a prototype laser interferometer.

Drive Will Stress 'Fair Share' Giving

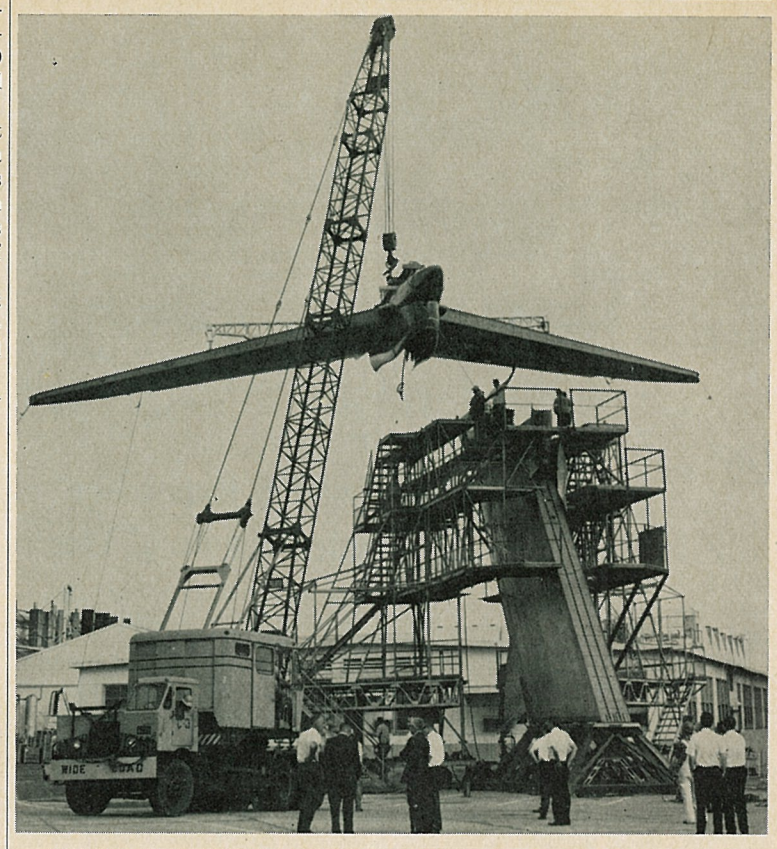
With "Fair Share" giving and substantially increased participation as goals, Convair division has scheduled its annual Employes' Con-Trib-Club membership campaign from Oct. 5 through 20.

Con-Trib members, through systematic payroll deductions, help support more than 100 health, welfare and youth agencies and finance Emergency Aid for employe families struck by unexpected financial crises.

Jack L. Bowers, Convair general manager, will serve as chairman. Each department is naming a campaign coordinator this week. Coordinators will solicit employes through campaigners within their departments.

"Seventy per cent of our employes are currently contributing to Con-Trib-Club," Bowers said. "However, only 13 per cent are contributing a Fair Share. Our goal for the upcoming two-week campaign is to achieve Fair Share giving by 85 per cent of

(Continued on Page 5)



"FLYING" TAIL—Horizontal stabilizer for first C-5 empennage apparently "soars" as it hovers over tall vertical before mating.

First C-5 Empennage Mated For Proof Check at Lindbergh

First C-5 empennage built at Convair division for the giant Air Force C-5A fanjet transport, world's largest airlifter, was mated for proof check at the division's Lindbergh Field plant last week.

Convair has the contract for 58 C-5A empennages, plus two test articles, from Lockheed-Georgia Co., prime contractor.

Components of the first tail will leave the San Diego plant on Sept. 28 by special railroad cars. They are due to arrive at Marietta, Ga., base of the Lockheed-Georgia division, Oct. 4.

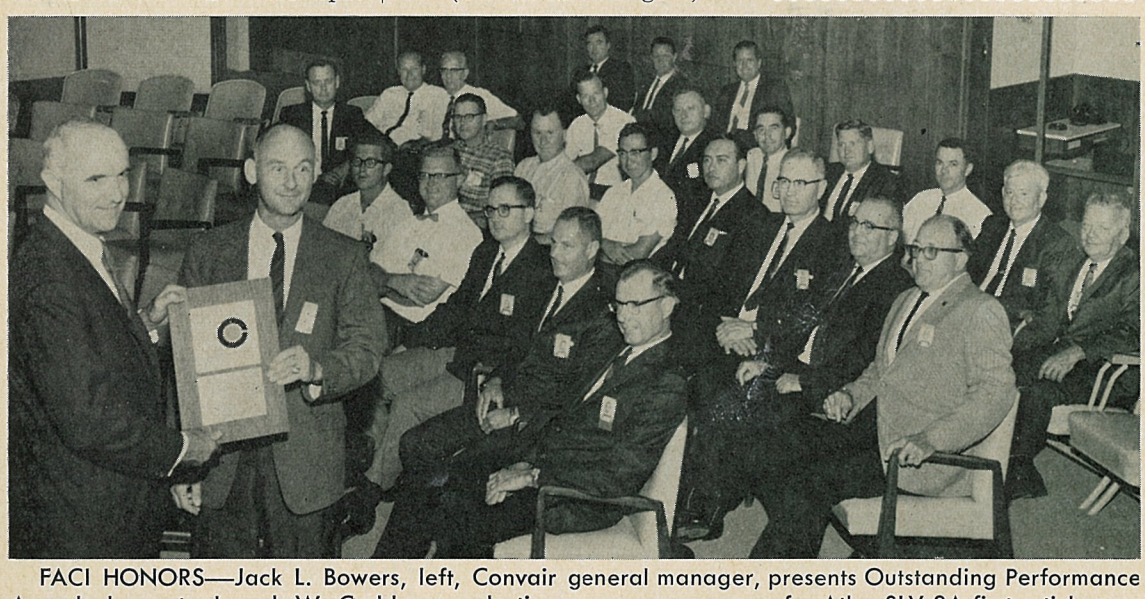
Last week's mating of main empennage components proofed out the fit of the horizontal to the vertical stabilizer, explained R. W. Miller, C-5 program manager at Convair.

Horizontal stabilizer tips and leading edges for both the horizontal and vertical stabilizer were proofed on the components before the mating.

Roll-out of the first C-5A is scheduled by Lockheed the early part of 1968. First flight is due in mid-1968 and first delivery to the Air Force is scheduled for 1969.

Now on Convair's production

(Continued on Page 2)



FACI HONORS—Jack L. Bowers, left, Convair general manager, presents Outstanding Performance Award plaque to Joseph W. Coddou, production program manager, for Atlas SLV-3A first article configuration inspection team. Efforts of team also have been commended by Air Force officials.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Sept. 1 and Sept. 15.

Thirty-year: Dept. 049, J. A. O'Connor Jr.; 144, C. W. Dale; 761, G. G. Shoop.

Twenty-five year: Dept. 001, W. O. MacRae; 015, C. M. Vaughn; 019, D. G. Williams; 041, M. Reyna; 250, J. D. Juarez; 400, Helen S. Marshall; 401, C. R. Nichols; 402, O. W. Sweetland; 420, A. Markewich; 595, H. W. Buckner, S. C. Padilla; 732, L. E. Dean.

Twenty-year: Dept. 016, Carmelita R. Slack; 113, Ketha C. Johnson; 143, W. M. Murphy; 149, H. E. Salley; 400, E. G. Sherman; 401, R. McLenachen; 403, R. P. Concannon; 563, Gertrude H. Ross; 761, D. D. Arce, J. F. Martinez; 820, G. A. Axt; 831, W. France; 833, Letha W. Callaway; 836, R. T. Riding; 842, Virginia S. Soderberg; 957, G. H. Slater; 988, J. R. Ross Jr.

Fifteen-year: Dept. 101, Arleatha S. Helton; 104, Ruth L. Manning; 142, J. N. Roberts; 191, Verna W. Brass; 300, E. J. Jaeschke; 401, J. L. Albrecht, A. S. Stebbins; 451, V. D. Smith; 515, K. E. Vaughn; 518, Lena P. Rogers; 519, R. W. Jett; 524, Derlie C. Kiriaze; 531, T. A. Gorman Sr.; 565, Dorothy G. Adams, E. W. Sweeney; 579, E. Barbic; 589, D. W. Srull; 761, L. F. Walsh; 780, Edna M. Callahan, Anne J. Capatanos; 953, J. M. Kenna; 961, P. E. Southwell; 966, D. F. Schonholtz; 988, C. F. Greer Jr.; 999, J. R. Hallman.

Ten-year: Dept. 001, S. Ingrassia; 002, R. A. Castillo; 130, A. Lock; 141, W. J. Knox; 144, M. C. Stanfill; 146, R. W. Roeser; 170, Charlotte H. Bowen; 250, A. Mendez; 300, R. E. McDaniel; 401, I. L. Crane, H. L. Fix, A. B. Hall; 511, June R. Davis; 512, D. H. Vaughan; 515, J. B. Adams; 533, J. C. Lutz; 545, B. A. Gurney; 553, Clare S. Hodgins; 578, W. C. McPike; 583, W. S. Zombek; 589, R. E. Bradley; 592, C. D. King; 780, Mary E. Stoltz; 840, H. A. DeCorse; 967, Margaret M. Simmons; 979, L. H. Gross, J. M. Kechele, L. H. Turcot Jr.; 985, E. Bugera; 988, R. W. Henderson; 999, B. F. Pierce.

STROMBERG-CARLSON

Ten-year: Dept. 84, H. L. Kennedy; 85, M. K. Muir.

Retirements

CONVAIR

BENDER—Lawrence L., Dept. 833-2. Seniority date Nov. 19, 1942, retired Aug. 31.

CARRERA—Obie B., Dept. 16-0. Seniority date Aug. 15, 1947, retired Aug. 31.

CARSON—Willis H., Dept. 019. Seniority date Feb. 21, 1947, retired Aug. 25.

DELVA—Michael G., Dept. 405-0. Seniority date July 24, 1941, retired Aug. 31.

DISNEY—Pinkney D., Dept. 015-0. Seniority date July 24, 1941, retired Aug. 31.

HANSEN—Grant D., Dept. 149-4. Seniority date Nov. 15, 1940, retired June 30.

HOFFARD—Walter C., Dept. 250-2. Seniority date May 29, 1953, retired Aug. 31.

JUST—George W., Dept. 149-7. Seniority date Jan. 10, 1940, retired Aug. 22.

NILSEN—Esther H., Dept. 101-6. Seniority date Feb. 13, 1952, retired Aug. 31.

PAINE—Willie B., Dept. 733. Seniority date Aug. 18, 1950, retired Aug. 31.

RUNKLE—Sam C., Dept. 835-2. Seniority date Dec. 20, 1955, retired Aug. 31.

Personals

CONVAIR

I wish to express my sincere appreciation to all my friends in Dept. 016 for the lovely retirement party.

Evelyn Carrera (retired)
Dept. 016

* * *

We wish to thank our many friends for their generosity and thoughtfulness upon the recent loss of our father.

The M. Formanek Family

* * *

We wish to thank all of our many Convair friends for their kind expressions of sympathy, thoughtful acts, and flowers at the death of our husband and father, Lawrence Lawson, Dept. 149-0.

Mrs. L. G. Lawson and Family.

Births

CONVAIR

GALLOWAY—Son, Daniel David, 9 lbs., 14 oz., born Aug. 25 to Mr. and Mrs. David Galloway, Dept. 015.

KORTY—Son, Jonathan Charles, 7 lbs. 6 oz., born Aug. 25 to Mr. and Mrs. Charles H. Korty, Dept. 595-0.

TAYLOR — Daughter, Ruth Kari, 7 lbs., 2½ oz., born Sept. 12 to Mr. and Mrs. Lambert Taylor, Dept. 958-7.

Deaths

CONVAIR

AHLGREN—Swen, Dept. 533-2. Died Sept. 4. Survivors include his wife, Gurlie M., and two sons, Bruce and Gary.

ARMIJO—Alfonso M., Dept. 833-2. Died Sept. 10 in Albuquerque, N.M., while on vacation. Survivors include his wife, Lena.

IVERSON—Dorothy, Dept. 143-1. Died Sept. 1. Survived by daughter, Hollie Susan, and son, Terrence.

KEEFER—Eugene, Dept. 516-0. Died suddenly Sept. 1. Survived by wife, Elynor; two sons, Ronald and Richard; two daughters, Jean and Diane.

NORDEN—Ernest A., Dept. 250-2. Died Sept. 9. Survivors include his wife, Grace A.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Awards

CONVAIR

Employe Suggestion Awards approved for the week ending Sept 8:

Dept. 019-0, R. Lucero, M. F. Miller; 027-0, M. J. Lynn; 031-0, E. S. Budzinski; 041-0, J. T. Kucala; 059-1, J. W. Miller; 130-8, R. P. Schulz; 143-3, P. E. Petiford; 144-1, M. L. Jamison; 149-7, R. C. Miller; 250-4, G. J. Kleber Jr.; 460-0, V. Halmaghi; 717-0, D. L. McDaniel; 756-0, H. P. Higdon; 759-0, E. Gabbard; 763-0, B. K. Williams; 780-3, M. B. Clapper; 810-1, W. Ryerson; 820-0, T. E. Barker; 831-0, S. A. Stowers; 953-3, L. E. Laffen; 957-0, T. Madden, R. E. Torrence; 964-2, K. E. O'Neil; 979-1, V. V. Jones; 979-2, L. M. Shenise; 979-3, C. T. Murray.

Papers Presented

CONVAIR

ADAMS—J. D., Dept. 583-0. "Satellite Lifetimes for Highly Elliptic Geocentric Orbits." AIAA/Guidance Control and Flight Dynamics Conference, Huntsville, Ala.

BONINE—K. C., Dept. 595-0. "Digital Computer in Flight Control Analysis." SAE/Aerospace Vehicles Flight Control Systems Meeting, Boston, Mass., Aug. 10.

CHRISTIAN — Jack, Dept. 572-1. "Mechanical Properties of Titanium Alloys at Cryogenic Temperatures." National Research Council's 1967 Cryogenic Engineering Conference, Palo Alto, Calif., Aug. 21-23.

DOWNING—Ken O., Dept. 551-4. "Magnetic Considerations for Near-Earth Orbits." University of Nevada and NASA Symposium on Space Magnetic Exploration and Technology, Reno, Nev., Aug. 28.

GIEGLER—D. P., Dept. 966-7. "Control System Analyses for the Centaur Optimum Guidance/Autopilot Study." SAE/Aerospace Vehicles Flight Control Systems Meeting, Boston, Mass., Aug. 10.

HOWELL — George, Dept. 584-0. "Thermal Design of the Orbiting Vehicle Type One (OV1) Satellite Series." USAF/Thermal Control Working Group Meeting, Dayton, Ohio, Aug. 16-17.

KAYE—S., and R. T. MURRAY, Dept. 596-0. "High-Altitude Explosion Properties of the Hydrogen-Oxygen Systems in a Simulated Saturn Interstage." National Research Council's 1967 Cryogenic Engineering Conference, Palo Alto, Calif., Aug. 21-23.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Mondays, Oct. 9 and 23. Lindbergh Field, ext. 491, Bldg. 14 auditorium, first shift, 8 a.m., Tuesday, Oct. 3; second shift, 4:30 p.m., Tuesday, Oct. 10. AF Plant 19, ext. 491, Bldg. 3, 1st mezz., Col. B-14 conference room, 8 a.m., Thursday, Oct. 19.

PROFESSIONAL/TECHNICAL

DAMAGE PREVENTION — Kearny Mesa, first shift, Tuesdays and Wednesdays, 8-9 and 10-11 a.m., Oct. 3 and 4, Bldg. 17, Room 8. Lindbergh Field, first shift, Wednesdays and Thursdays, 8-9 and 10-11 a.m., Sept. 20, 21, 27, 28, Oct. 11, 12, 18, 19, 25, 26, Nov. 1, 2, 8, 9, 15, 16, Bldg. 14 auditorium. For information call W. F. Weidenfeller, ext. 1931 KM.

PROGRAMMED SELF STUDY—A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Educational services office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Rider-Driver

CONVAIR

RIDE WANTED — From Burgener Blvd., Clairemont, to Lindbergh Field plant. 7:30-4:30 shift. Joan Winger, home phone 276-6716, after 5:30 p.m.

RIDE WANTED—From Ballinger Ave. (San Carlos area) to Lindbergh Field. 7:00 a.m. to 3:30 p.m. shift. Phone Will Richeson, home phone 463-1891.

RIDE WANTED—From 4733 Utah St. (corner Utah and Adams Ave.) to Kearny Mesa, 7:30 to 4:15 shift. Phone June Casey, ext. 801 KM or (home) 284-9831.

First C-5 Empennage Mated For Proof Check

(Continued from Page 1)

line the second empennage unit which is slated for the static test article is in the bucks. Components are due to go out in mid-October, according to E. D. Robinson, general foreman in charge of assembly.

The third unit will be the second test article. It will go to Convair's structures laboratory at the Harbor Drive Facility for stiffness testing. Following testing the empennage will go back into primary assembly for completion as a production unit.

The third production unit is due for completion in mid-February.

Chapters to Hold Joint Dinner Meet

San Diego chapters of the Society of American Value Engineers and the National Association of Purchasing Agents will hold a joint dinner meeting tonight, Sept. 20, at 6:30 p.m. at Padre Trail Inn.

Harold Weideman, manager of purchasing for Solar, will be main speaker.

A one-day value engineering seminar will be held by SAVE this Saturday, Sept. 23, at the Stardust Motor Hotel in Mission Valley.

High Accuracy Achieved by Atlas-Centaur

(Continued from Page 1)

flight sequences occurred as planned.

After Atlas-powered flight of 4.1 minutes, Centaur 10D's liquid hydrogen engines had a "first burn" of 5.4 minutes, followed by a 6.7-minute Centaur-Surveyor orbital coast and a 1.9-minute "second burn" of the Centaur engines.

Officials from Kearny Mesa present for the launch included Grant L. Hansen, vice president-launch vehicle programs; Andrew Kalitinsky, launch vehicle engineering director; Richard W. Keehn, Atlas SLV manager; and Deane Davis, Centaur manager. Daniel Sarokon was launch conductor.

Seven Convair representatives also were at Jet Propulsion Laboratory in Pasadena Sept. 10 for the Surveyor's soft landing and return of initial photographs.

They were Hansen; Davis; Keehn; W. Fenton Miller, Atlas D/E/F manager; Karl Kachigan, chief engineer-analysis and development; Robert Benzwi, project engineer; and Frank B. Anthony, assistant chief engineer-flight mechanics.

Surveyor 5, after experiencing a helium leak during its 66-hour flight, settled down on a 20-degree slope at edge of the moon's Sea of Tranquility.

"It was an exciting finish because of the unorthodox descent sequence," Benzwi said. "Since the helium leak resulted in lower vernier engine thrust, the landing procedure was altered with the solid-fuel retro motor being fired much later than originally planned so it would burn out at lower altitude," he said. "Split-second timing was required to accomplish the flawless soft landing."

Benzwi said first photos returned by the Surveyor were of excellent quality. One showed lunar dirt that had been kicked up on one of the spacecraft's legs during landing. Others showed nearby terrain and Surveyor equipment.

Thousands of photos were to be taken and transmitted during the following 14 days of lunar daylight.

JPL and NASA representatives said excellent data also was being received last week from an alpha scattering experiment designed for analysis of the lunar soil.

In addition to determining chemical composition of the lunar soil, the experiment may provide a clue to the history and present stage of development of the moon. The analysis also may determine if any of the meteorites falling on earth are of lunar origin.

Mgt. Club Will Hear 'Adventure in Sound'

Convair Management Club members will meet at 5:30 p.m. this evening, Sept. 20, at the Kearny Mesa dining room, Bldg. 8, for an in-plant dinner meeting and joint Pacific Telephone and IBM program.

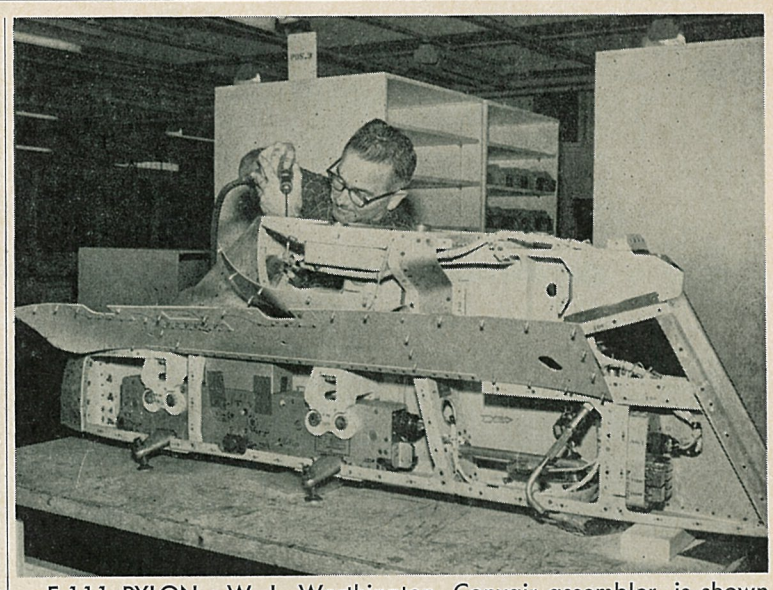
Pacific Telephone will present "Adventure in Sound," and IBM will demonstrate the information system, MIDAS, with a hookup from an IBM 1050 data communication terminal to a computer in Los Angeles.

Dinner will be served by the Prophet Co. at 5:30. The program starts at 6:30. Boosters are selling tickets at $1.75 each.

Convair 5-Year-Plan Subject of Briefing

Brig. Gen. Arthur E. Exon, director of the Defense Contract Administration Services Region-Los Angeles, and members of his staff were briefed Sept. 6 on Convair division's five-year plan, product lines and objectives by Jack L. Bowers, division manager.

Col. James R. Ourand, DCAS plant representative at Convair, was present for the briefing, held at Gen. Exon's headquarters at Los Angeles.



F-111 PYLON—W. L. Worthington, Convair assembler, is shown completing one of 18th ship's set of F-111 fixed pylons in Convair production area at AF Plant 19. Set was delivered to Fort Worth division last week. Line is now on four-day move, turning out five ships' sets a month. L. C. Hare, assistant foreman, is in charge of pylon production.

Sustained Performance Awards Earned by Four Convair Depts.

Sustained Performance Awards are being presented to four Convair division departments that improved performance by more than 20 per cent during the first six months of this year.

Receiving the awards are Dept. 001, sheet metal at Lindbergh Field; Dept. 420, tool planning and control at Kearny Mesa; Dept. 518, graphic reproduction at Lindbergh Field and Kearny Mesa; and Dept. 985-35, material control at Vandenberg AFB.

Jack L. Bowers, Convair general manager, presented the framed award certificates to Depts. 001, 420 and 518 last week. Accepting in behalf of the departments were G. K. Cox, general foreman, Dept. 001; H. B. Day, chief of graphic reproduction, Dept. 518; and G. E. Nuss, supervisor of planning and control, Dept. 420.

Dept. 985-35 was to receive its award in the near future.

Bowers said this year's goal of 20 per cent improvement for the 27 departments in which quality had been measured last year under the division's Craftsmanship program appeared at first to be too difficult, but rapid improvement has been achieved.

"Convair has established a reputation as a quality producer," Bowers said, citing the division's record on C-141 and other aircraft programs and the record of 35 consecutive successful Atlas space booster launches.

"We want to maintain a good record for quality as well as low cost," he said. "This will make it possible for us to secure important new programs."

Bowers commended each member of the award winning departments for their work performance improvement and urged them to continue their exemplary efforts, to benefit the division as a whole as well as their individual departments.

Supervisors receiving the awards pledged continued efforts to "do an even better job."

Dept. 001, based on its Craftsmanship record last year, had a goal of 103.2 defects per 1,000 manhours this year. Its January through June performance was 59.7 defects per 1,000 manhours, surpassing the goal by 42.2 per cent.

Dept. 420's goal of 5.7 average discrepancies per 100 pages reviewed was exceeded by 31.6 per cent—with actual performance of 3.9 discrepancies for the six-month period.

Dept. 518 reduced its defects per 1,000 manhours to 118.3, or 4.4 per cent better than its 123.7 goal.

Dept. 985-35 reduced defects to .33 per 1,000 manhours for the six-month period, surpassing its goal of .39 by 15.4 per cent.

★ ★ ★

EIGHT BANNER AWARDS MADE

Craftsmanship Achievement banner awards for the second quarter this year have been presented by Convair departments.

Winners were:

Kearny Mesa operations—production control Dept. 830-0.

Launch vehicle programs—administrative services Dept. 954-3.

Lindbergh Field operations—factory management Dept. 010-0.

Controller's operations—general accounting Dept. 191-0.

Reliability control—corrective action data center Dept. 146-3.

Research and engineering—mass properties Dept. 588-0.

Vandenberg AFB — financial control Dept. 985-6.

Eastern test range—electronic data processing Dept. 979-6 and materials group Dept. 979-3.

Selection of winners is based on the number and realism of goals established by departments and performance toward objectives.

FACI Team Commended

(Continued from Page 1)

Bowers said both he and Roger Lewis, president of General Dynamics, had received letters of commendation from the Air Force for the exceptional FACI performance.

The engraved inscription on the plaque, signed by Bowers, stated:

"Through the team efforts of responsible Convair employes, the SLV-3A first article configuration inspection was completed with no significant discrepancies written.

"The unusually clean physical appearance of the vehicle was matched by the configuration documentation. This FACI demonstrated the achievements which can be made by people dedicated to meeting stringent requirements of configuration management.

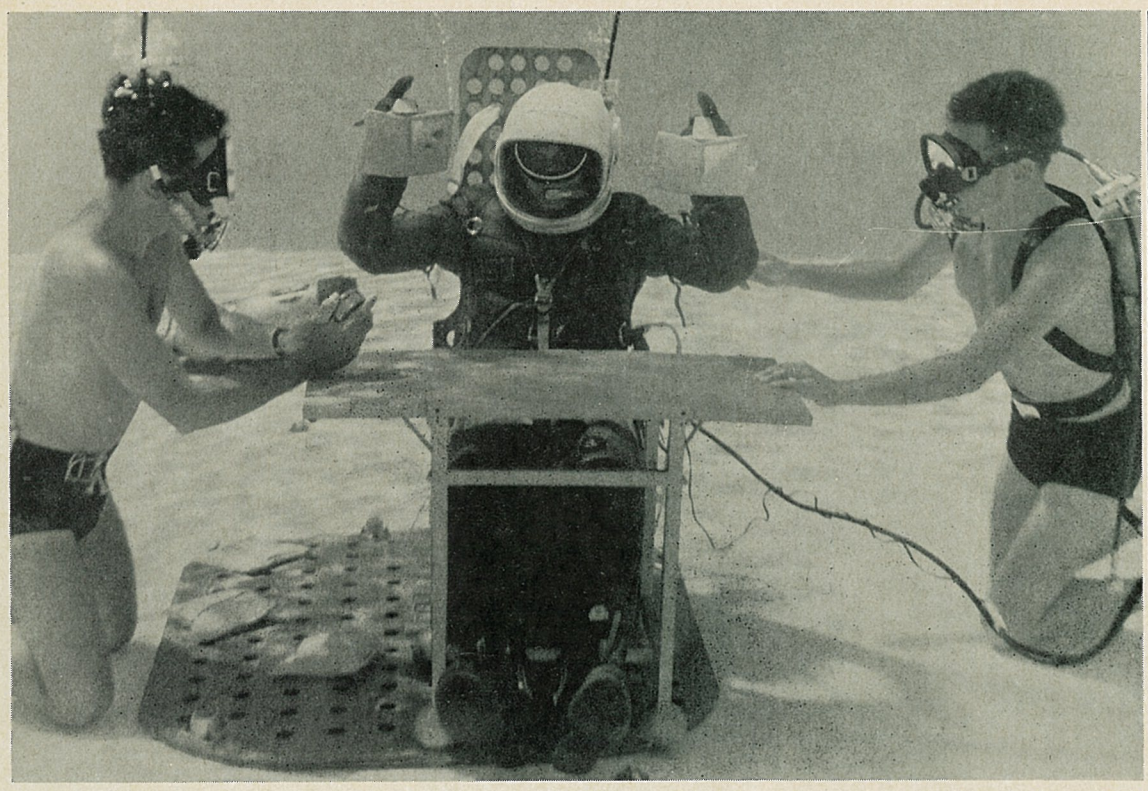
"All who took part are to be commended for their contribution to the ever demanding challenge of Convair Craftsmanship."

Division personnel who assisted with the FACI, in addition to Coddou, included L. H. Allen, R. B. Amick, J. F. Baebler, G. E. Briggs, Ray Brown, R. J. Buehler, E. E. Chavez, R. H. Cunningham, W. D. Daniel, E. R. Dershem, Allene DeVoe, Lee Ely, R. F. Fox, J. P. Giordano, G. L. Hansen, W. M. Hill, C. M. Hooper, E. L. Johnson and Charles Jones.

Also Andrew Kalitinsky, R. W. Keehn, Fred Lee, L. E. Lightbown, W. E. Lippert, R. L. Lucas, L. I. Medlock, J. B. Martinez, Tom Neal, K. E. O'Neil, C. L. Parker, G. E. Rolston, H. H. Rush and J. W. Smith.

Salvage Schedule

Next sales day for GD employes at Convair salvage yard, Lindbergh Field plant, adjacent to Gate 5, will be Saturday, Oct. 14. Hours are 8 a.m. until noon.



WEIGHT LIFTING—Richard Wolf, in spacesuit, lifts weights in underwater exercise during which his pulse rate, body temperature, etc. are monitored. Photo was taken through viewing window of new underwater test facility at Convair.

First Test Series Under Way in New Underwater Facility at San Diego

Convair life sciences Dept. 592-0's new underwater test facility at Kearny Mesa is now in use.

Richard Wolf, a life sciences design engineer and test facility coordinator, was test subject for the initial tests, designed primarily to establish baseline parameters for a new underwater bio-monitoring system. A small monitoring device developed by the department from "off-the-shelf" components transmitted carbon dioxide, pulse rate, temperature measurements and an electrocardiogram as Wolf performed underwater tasks in a neutral-buoyant, water-pressurized space suit.

The new 35x45-ft. underwater test facility is 15 feet deep and has a 15x16-ft. viewing room at the north end with 4x5-ft. windows for viewing and photography. A portable camera transmits closed-circuit TV pictures. A hydrophone system is used for communications.

Robert C. Armstrong, MD, manager of life sciences, said the new facility will be used for a wide range of test programs, including many studies in which low-gravity conditions of space will be simulated.

The test programs will be conducted under the direction of Robert S. French, PhD, chief of the department's crew performance section.

William A. Shafer, MD, medical monitor for manned test programs, said baseline parameters established for the bio-monitoring system will be used in future test programs, including one beginning late this month for comparison of water-pressurized and air-pressurized spacesuits under simulated zero-gravity conditions.

Transmissions from the bio-monitoring unit are carried from the test facility by land line to the adjacent integrated manned systems simulator (IMSS) and are recorded graphically by eight-channel recorders and on tape.

John Steadman and Don Vorbeck of Dept. 592-0 had major roles in development of the bio-monitoring system and James Lindsay and Walter Church, both Dept. 756-0 senior electronic development technicians, installed transmission lines to the IMSS equipment.

Wolf said the evaluation of water vs. air pressurized space suits will include analysis of such factors as dexterity, mobility, visibility, preparation time, personnel requirements, safety and workload capabilities of the two systems.

A scuba-type breathing system will be used during the water-pressurized suit evaluation. The air-pressurized suits will have weights attached for underwater neutral buoyancy.

Tests simulating in-space assembly and maintenance of lightweight metallic structures will begin in October under an Air Force contract with Robert Brazell as program manager. A Gemini full-pressure spacesuit will be used.

Typical extra-vehicular-activity (EVA) space assembly tasks will be performed with test subjects in different "tether modes."

French said many of the tests already planned for next year will be for development and evaluation of EVA simulation techniques and equipment, pressure suit modications, underwater communications, propulsion units, minimum reaction tools, restraint systems and test instrumentation.

"Underwater neutral-buoyancy tests can provide valid and useful data for cost-effective design and testing of space structures and techniques and for increasing effectiveness of man in space," French said.

Convair's new test facility also may be used by military services and airlines for special water test and crew training programs and by other General Dynamics divisions for unmanned vehicle stability and other test programs.

FIRST "DIVE"—William A. Shafer, MD, right, confers with Richard Wolf prior to first test in new Convair underwater facility. Assisting are Ernie Casco and Gary Thomson.

A Real Caravan

Lincoln Continental Equipped To Carry, House Family of 10

Now undergoing trial runs by Leo Morneault's family of ten is a unique camper he designed and built to fit on his 1958 Lincoln Continental sedan.

Morneault, office machinery repairman at Pomona division, hopes his family can take a trip to the East Coast next spring. With five daughters and three sons (2½ to 18 years old) and his wife, Ann, there's need for lots of space.

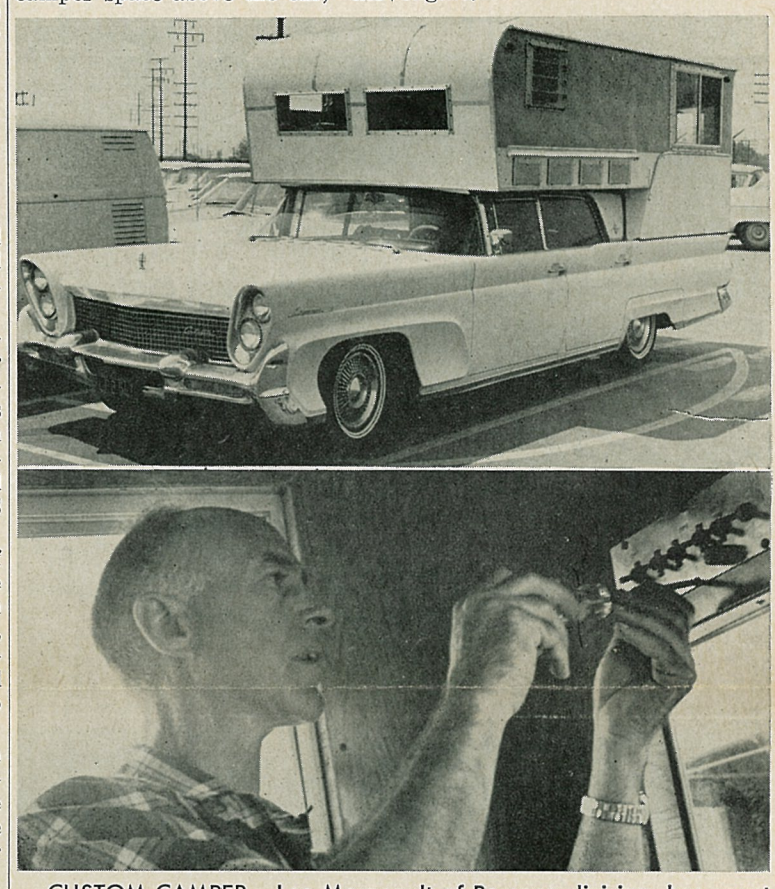
"I began my project last May," Morneault said. "Some 250 hours later (200 working and about 50 thinking), my camper is about 90 per cent complete and ready for trial."

Only alterations to the automobile were removal of trunk lid and addition of dual rear shocks.

"It's planned that the larger members of family will sleep in camper space above the car," the designer explained. "Smaller ones have space allotted on seats and in the trunk area."

The camper is designed to use heat and air conditioning from the car's unit. Interior of the camper, which has five safety glass windows, is of imitation ash (plywood). Exterior is of aluminum. Eight compartments in the camper sides open from outside and each has its own light and weather stripping.

For the curious, Morneault has noted these statistics on a plaque on outside of camper. "Length: car, 229 inches; camper, 144 inches. Width: both car and camper, 80 inches. Height: car, 56.5 inches; car and camper, 89.5 inches. Weight: car, 5,450 pounds; camper, 370 pounds. Car has wheelbase of 131 inches; 375 horsepower with 430 cubic-inch engine.



CUSTOM CAMPER—Leo Morneault of Pomona division, has spent some 250 hours designing and constructing custom camper for his 1958 Lincoln Continental sedan. Only alterations to car were removal of trunk lid and addition of dual rear shocks.

Many From General Dynamics Take Part in Quality Meeting

General Dynamics personnel had important roles in the American Society for Quality Control 1967 Western Regional Conference last week (Sept. 15-16) in San Francisco.

J. Y. McClure, General Dynamics director of product support and field service and 1960-61 ASQC president, appeared on a presidents panel. L. I. Medlock, director of reliability control for Convair and an ASQC fellow, is chairman of the Western Regional Council.

A. C. Hagen, director of operations for Stromberg-Carlson, spoke on "Quality Motivation in Commercial Products" on a quality motivation panel session that was organized and moderated by W. E. Magnuson, chief of special projects in reliability control for Convair.

John Mraz, chief of the quality assurance engineering branch of the Defense Contract Administration Services Plant Representative's Office at Convair, spoke on "Professional Promotion and Publicity" at a quality assurance education session which he also organized and moderated.

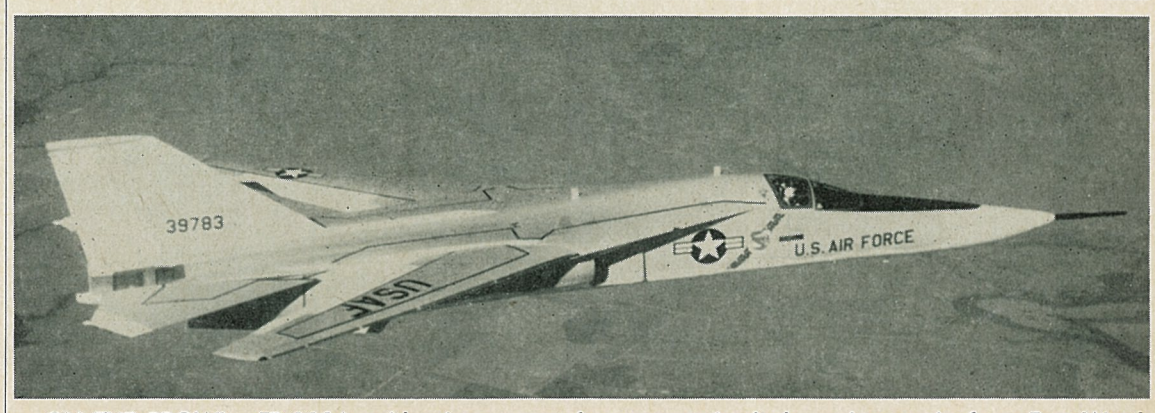
Other members of the San Diego ASQC section attending included L. I. Fredrickson, C. L. Amaral, H. H. Mishler, P. E. Gelles, R. J. Hendrickson, W. T. Hollar, Sam Petcher, G. C. Kolsky, L. C. Stuckey, G. A. Gibbons, J. E. Cook, C. M. Hooper and C. A. Miller all from Convair; A. E. Hinck of the DCAS Plant Representative's Office at Convair; R. H. Nicholson of Electronics, San Diego; and R. K. Barnett of Stromberg-Carlson Data Products.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

ARCHIE H. RAMBEAU JR (1959) from Convair division to industrial relations staff, Corporate Headquarters; **RUSSEL H. McDONALD** (1967) from Pomona division to Convair as senior production engineering planner; **DAVID E. KLIPFEL** (1967) from Convair to General Atomic; **RONALD D. BRANT** (1953) from Convair to Electronics-San Diego as quality control engineer; **THOMAS T. JONES** (1967) from Convair to engineering writer, Stromberg-Carlson Data Products; **ERNEST J. GALBOS** (1958) from Convair to Pomona; **K. J. KUHL** (1960) from Electronics-San Diego to Electronics, Rochester, as senior cost estimator; **SEYMOUR P. HARTZBERG** (1956) from Convair to engineering specialist, Electronics-San Diego.



ON THE PROWL—FB-111A, with wings swept for supersonic dash, makes sortie from Fort Worth division.

Stronger than Steel, Lighter than Aluminum: A report from General Dynamics

That elephant is standing on a plank made of boron-epoxy composite.

So far, this new structural material has been used only for aircraft and space vehicle parts on a research basis, but it will be going into commercial use in the near future. And it could lead to radical change in aircraft and vehicles of all types as we know them now.

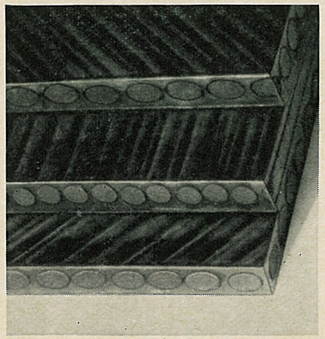
Take two identical aircraft, one built of conventional aluminum, the other with the same parts of boron composite. The boron airplane theoretically could carry twice the payload for the same distance, or go twice as far on the same amount of fuel.

An auto with body and frame of boron composite could be as big and comfortable as a Cadillac yet lighter than a Volkswagen. The combination of lightness and size would mean the car could be driven by a battery-powered aluminum engine and protected against impact with polyurethane foam bumpers.

For boron composites are a new *kind* of material. This form, with boron filaments embedded in epoxy plastic, is as strong and stiff as high-strength aircraft-quality steel, but 75 percent lighter. It is three times as strong as aluminum but more than 25 percent lighter.

What is boron?

Boron is a semi-metallic element—the fifth element in the atomic table. Widely available, it is usually found in combination with other minerals. Best known uses until now—and called for in limited amounts—have been the familiar household boric acid, or the borax used in glassmaking. In some chemical combinations it is almost as hard as diamond (but with even greater heat resistance), and is used to cut and shape such extremely hard materials as carborundum.



Each layer of the boron-epoxy filament tape is oriented at a different angle. This enables the laminated composite to withstand stress from any direction.

But boron was rarely, until recently, seriously considered as a structural material. The demands of space vehicles and high-performance military aircraft called for a deeper look. New kinds of materials, with hitherto-unrequired standards of strength, light weight, and heat resistance, have become crucially important.

For the past few years, General Dynamics has been working with boron composites—filaments of boron in "matrices" of plastics or metals—largely under contract to the United States Air Force. Sections of boron-epoxy have already been successfully tested in supersonic flight.

Brittle—and tough:

In many of the most common ways of shaping metals (casting, for one) boron is extremely brittle. But just as glass, brittle in many ways, has high strength in filament or fiber form, so has boron filament—extraordinarily high usable strength. And boron is also uniquely stiff—six times stiffer than glass.

These boron filaments mixed with, say, an epoxy plastic or molten aluminum, result in a composite which possesses the best qualities of both materials. The form closest to commercial use is the boron fiber in an epoxy matrix, although aluminum and even titanium matrices are being tested for more exotic uses.

For some military aircraft and space vehicles, these remarkable new materials offer an invaluable combination of great strength, stiffness, light weight and heat resistance.

But right now, boron is still expensive. Steel averages out at 6 cents a pound; glass fiber, at 60 cents a pound. And aluminum, which once cost $6,000 a pound, now ranges from 22 to 75 cents a pound, depending on the grade.

The boron-epoxy composite not long ago was priced at about $1,000 per pound. However, over the last few months, its cost has been reduced by more than two-thirds. As more applications are worked out and more demand arises, its price is already dropping still further to more economic levels, just as aluminum did.

It will be a while, however, before boron composite becomes competitive, on a pound for pound basis, with more conventional materials. But other factors might compensate.

In construction, buildings with structural members and other major parts made of boron composite could be built much taller—and in a wider variety of architectural shapes than is now practical.

Single span bridges twice as long as the longest now existing should be possible. Boron vehicles generally—cars, trucks, or planes—could go farther on less fuel. New commuter trains built of boron to aerodynamic principles could carry passengers to their jobs swiftly and comfortably.

The boron filament is made by drawing an extraordinarily fine wire of tungsten, heated to a bright-red temperature, through a chamber into which boron trichloride and hydrogen gases have been pumped.

Thin as a human hair:

In the vicinity of the hot tungsten wire, chemical reaction yields pure boron and hydrochloric acid. The particles of pure boron are deposited on the moving wire and the hydrochloric acid is removed from the chamber.

The final boron filament is four one-thousandths of an inch in diameter, about as thin as a human hair. It is 95 percent pure boron and 5 percent wire core.

To build anything out of these filaments, they are first made into a composite in the form of a tape. About 212 boron filaments to the linear inch are coated with and embedded in epoxy on a glass-cloth backing to make a continuous tape in any desirable width. The tape is then rolled up on a spool for easy handling.

To build something out of the composite tape, a basic "sculpture," which might be a simple form for a flat panel or have more complex curves than the human body, serves as a mold.

Layer after layer of the tape is laid down on the form in much the same manner that any adhesive tape might be applied. Each layer is placed at a different angle (for instance, zero degrees, 45 degrees, 135 degrees) to enable the laminate to withstand stress from various directions. Composite products may be made in varying numbers of layers depending on the combination of weight, strength, and directional stress they must meet.

Any size or shape:

Boron-epoxy panels have been hand-laid experimentally in from three to 50 or more layers. Fully automated machines are being built that will lay-up boron composite sections in almost any size and shape that can be dreamed up.

When sufficient layers of tape have been placed, the entire form or part is "cured" in an autoclave—essentially a large pressure cooker.

The weight-saving will vary depending on how directional the load requirement is. The least reduction in weight compared to the same application in aluminum would be 45 percent. The reduction can be as much as 75 percent.

A three-layer piece would be only 1/60 of an inch thick. A 32-layer piece would be only 1/6 of an inch thick. But this 1/6 of an inch could be equal in strength to commercial building steel five times thicker, or aircraft-grade aluminum, three times thicker.

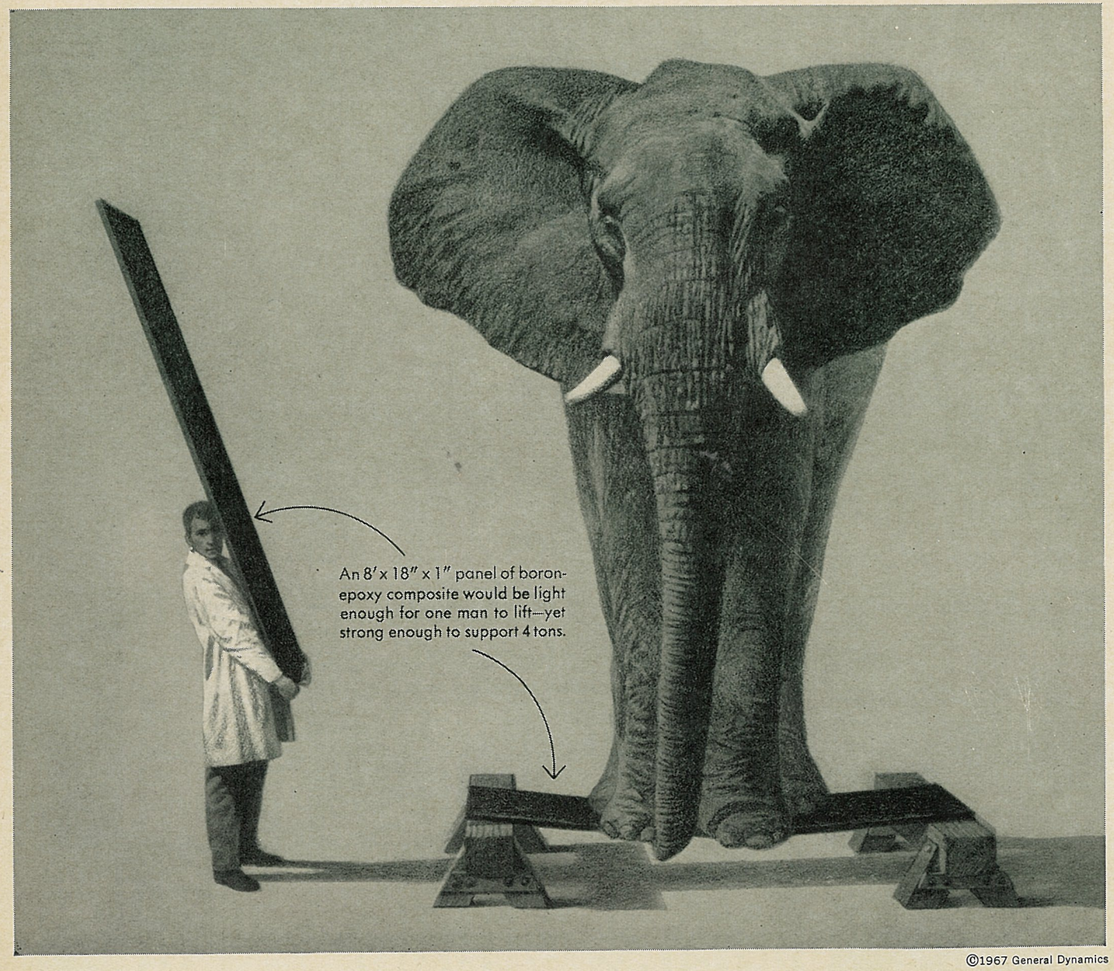
To meet some special conditions of space flight, General Dynamics is experimenting with variations far more exotic than the relatively simple boron-epoxy. These include boron-silicone-carbide filaments embedded in a whole range of metals such as nickel, copper, titanium, and aluminum.

General Dynamics is a company of scientists, engineers and skilled workers whose interests cover every major field of technology, and who produce: aircraft; marine, space and missile systems; tactical support equipment, nuclear, electronic, and communications systems; machinery; building supplies; coal and gases.

Reprints of this series are available.

GENERAL DYNAMICS

One Rockefeller Plaza, New York, New York 10020



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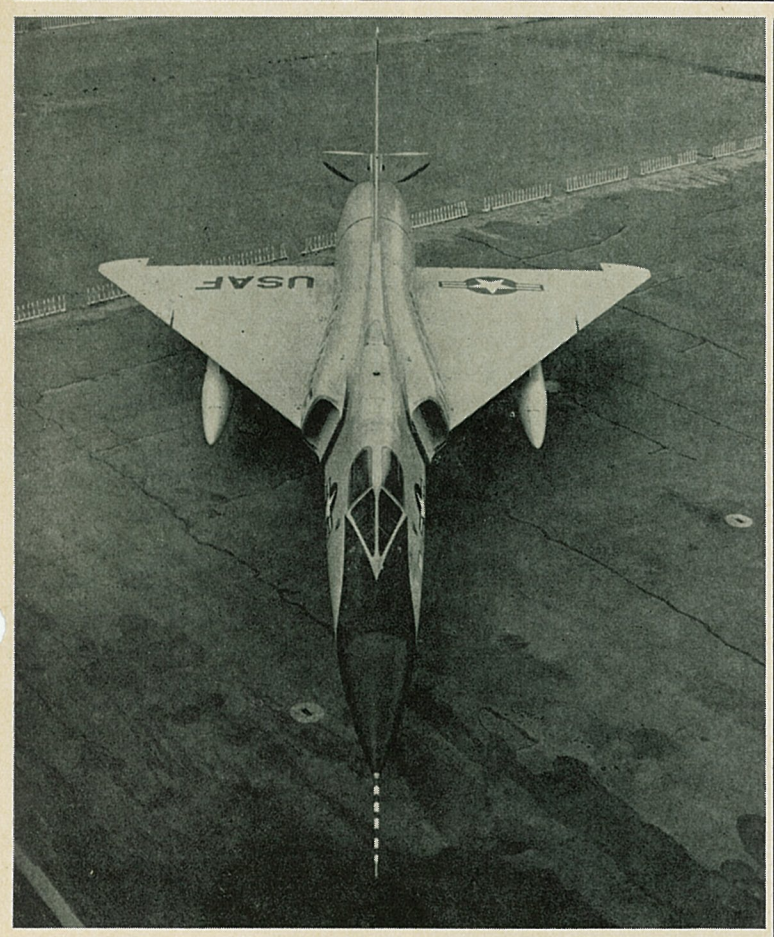


UPDATED F-106—Modifications now in progress on Air Force F-106s to increase long-range capability include supersonic drop tanks (shown beneath wings) and aerial refueling receptacle, both developed and fabricated at Convair. Equipped with refueling receptacle, F-106s can receive fuel at over 300 gallons per minute.—Air Force photo.

Convair Receives Another SAAMA Contract for Aircraft Support

Convair division has been awarded its fifth engineering services contract by the Air Force in support of F-102, F-106, T-29, and C-131 aircraft.

Contracting agency is San Antonio Air Materiel Area, Kelly AFB, San Antonio, Texas.

The present "on call" contract extends from August of this year to August of 1968 with an option to extend it for a period of three months.

The contract, No. F41608-68-C-0132, calls for support of the Convair-built aircraft, covering related aerospace ground equipment (AGE), training devices, technical order data, engineering data, and test equipment.

Contract phases are investigative engineering services required in determining causes and developing solutions of particular problems; prototype engineering services including design, fabrication, and testing of first modifications; and engineering testing on existing systems, sub-systems, or components.

Twenty calls, or work projects, totaling over $3 million in value, were received under the last engineering services contract.

Engineering services contracts are coordinated and administered by Convair's support contracts department under John Doig, manager. Fred Kennie is directly responsible for negotiations as chief of government support contracts.

Students Reminded On Tuition Refund

Going to school?

Convair employes enrolling in college-level fall semester classes are reminded that tuition refund requests (form A346) must be submitted to educational services at the beginning of the course. Requests will not be approved if received more than three weeks after the first class session.

Resumption of Bus Service To Kearny Mesa Considered

San Diego Transit Corp. is considering re-establishing bus service to Convair division's Kearny Mesa plant.

Surveys are being conducted to determine how many employes at Kearny Mesa and at other business locations in the Kearny Mesa Industrial Park area would ride the buses regularly, if service is resumed.

E. A. Reeder, traffic superintendent for the transit system, said service from downtown and Pacific Beach will be provided direct to the Kearny Mesa plant if customer interest warrants.

Service for a "circuit" that also would include the San Diego County Operations Center and business firms along Balboa Ave. as well as the Kearny Mesa plant also will be considered, if direct service is not feasible.

Bus service to Kearny Mesa was provided by the former San Diego Transit System from 1959 to June, 1966. Discontinuance was authorized by the California Public Utilities Commission at that time because the service was operating at a loss.

Reeder said Kearny Mesa plant employes have requested resumption of service, some desiring service from Pacific Beach.

Interested employes may fill out the survey coupon and forward it to the Transit Corp. via employe services.

To: San Diego Transit Corporation
Via: Employe Services, KM Mail Zone 130-50

Gentlemen:

I would ride the bus regularly if service is provided from:

Downtown San Diego via Fifth Ave. and Hwy. 395 (yes)____

Pacific Beach via Balboa Ave. (yes)____

Suggested bus route:_____

_____

Name:_____ Home Address:_____

Dept.:_____ Mail Zone:_____ Shift:_____ to_____

Drive Asks For 'Fair Share'

(Continued from Page 1)

the division's 14,000 employes."

Bowers noted that more than 80 division executives already have signed pledges to contribute one per cent of salary, or more.

"With this kind of leadership we expect Convair to re-establish its position as a community leader in per capita support of our United Community Services and other important community services organization."

Each employe's Fair Share is the equivalent of pay for 4 minutes work a day or eight tenths of one per cent of salary. A Fair Share table, based on salary rates, will be printed on the back of each pledge card.

Employes already giving a Fair Share through payroll deductions will receive a special pin prior to the campaign. Those who pledge Fair Share also will receive them.

United Community Services, which supports more than 70 health, welfare and youth agencies in San Diego county, will receive a substantial portion of the Con-Trib income. In addition, the Con-Trib committee will distribute funds to national health agencies and special community programs throughout the coming fiscal year. Ten per cent of all monies received through Con-Trib are retained for the club's Emergency Aid Fund.

During the past year, $33,536 has been distributed from Emergency Aid to more than 160 employe families to assist in unexpected catastrophic situations that have wiped out family savings. Most aid has been for hardships resulting from major or prolonged illnesses, accidents, disabili-

ty or death of members of the family. Payments have been made for medical and hospital bills, funeral expenses, insurance premiums, housing and food. Payments for child care has been made in cases involving illness or death of wives of employes.

Applications for Emergency Aid are investigated by two or more members of the Con-Trib committee. The committee is composed of representatives of the Company, the Convair Management Club, IAM, EAA, IBEW and UWA.

★ ★ ★

Con-Trib Gifts Exceed $5,000

More than $5,000 was allocated to six community organizations by the Convair Employes' Con-Trib-Club committee in recent meetings.

Sheltered Workshops of San Diego, Inc., received $3,200 for purchase of a multilith machine and a photo-direct camera, the National Cystic Fibrosis Research Foundation was granted $1,000 and the Pastoral Counseling Service of San Diego received $500.

The United Givers Fund of Huntsville and Madison County, Ala., was granted $225 on recommendation of Convair employes in Huntsville. The Lompoc Hospital District received $300 and the Santa Maria Servicemen's Center $100 on recommendation of employes at Vandenberg AFB.

Military Officers To Tour Convair

Eighteen foreign military officers who are in San Diego as guests of the U. S. Marine Corps Landing Force Training Command will visit Convair's Kearny Mesa plant Friday (Sept. 22) for an orientation tour and luncheon.

They are from the Republic of China, the Republic of Korea, the Republic of the Philippines, Spain, the Republic of Viet Nam and Thailand.

Convair Division Commended On Lunar Orbiter Successes

Convair division has been commended by NASA officials and others for its role in the highly successful Lunar Orbiter program. Atlas SLV-3s 5801 through 5805 were used as boosters for the five Lunar Orbiter spacecraft that have returned photographs of almost the entire surface of the moon.

Dr. Homer E. Newell, associate administrator for the Office of Space Science and Applications at NASA Headquarters, in a message to Jack L. Bowers, Convair general manager, said receipt of the final photographs from Orbiter 5 signaled the climax of one of the most successful programs in the history of NASA.

"The data returned from the five successful missions represent a scientific advancement which far exceeds our initial objectives," he said. "An entire new base for exploration of the moon has been established.

"The success of Lunar Orbiter is due in large measure to the team spirit and cooperation that existed across the board among the many government and industrial activities involved. You have set an outstanding example for future programs to follow.

"Please convey from both NASA and me personally, congratulations, gratitude and best wishes for the future to the many individuals who played a role in the magnificent achievement."

Dr. Abe Silverstein, director of NASA's Lewis Research Center, in a postscript to Newell's message, said "To this we at Lewis Research Center wish to add our expression of appreciation for your part in this most successful program."

Dr. Floyd L. Thompson, director of NASA's Langley Research Center, in a letter to Grant L. Hansen, vice president-launch vehicle programs, also asked that "heartiest congratulations" be extended to the Convair project team.

"The Atlas' outstanding performance for the five Lunar Orbiter missions has enabled NASA to achieve a new level of accomplishment and is greatly appreciated," he said.

"Your total effort in going forward with your portion of the Lunar Orbiter program has the deep appreciation of the Langley Research Center."

George H. Stoner, vice president and general manager of the space division of the Boeing Co., builder of the Lunar Orbiter spacecraft, also has expressed appreciation to Convair.

"The impressive five-for-five record of the Atlas-Agena in putting five Lunar Orbiters right on target certainly merits a hearty acknowledgement from Boeing," he said in a letter to Hansen.

"I would be most grateful if you would offer our sincere thanks and congratulations to the members of your Atlas team for their outstanding contribution to the Lunar Orbiter's success."

General Dynamics Men Involved In SAE Conference on Coast

General Dynamics men from Convair, Fort Worth, and Pomona divisions and Canadair Limited are taking part in the coming Aeronautic and Space Engineering and Manufacturing Meeting sponsored by Society of Automotive Engineers Oct. 2-6 at the Statler Hilton Hotel in Los Angeles.

Theme of this year's meeting is "in depth technical coverage of manufacturing and engineering topics important to the nation's aerospace programs."

G. A. Grossaint, Convair chief of manufacturing development and tool manufacturing, is a member of the manufacturing forum executive committee while H. W. Callihan and W. W. Withee, both of Convair, are on the program planning committee.

B. J. Handwerker, Convair industrial engineer, is co-chairman of the panel on Material Handling and Fabrication Control Techniques. James Starnes, Fort Worth supervisor of manufacturing research, is co-chairman of the panel on Profile Milling Machine Shortage. R. A. Lennon, Pomona, chief of manufacturing technology, is chairman and G. E. Sylvester, vice president of operations at Pomona, organizer of the panel on New Lower Cost Applications of EDM and ECM.

C. E. Roye, of manufacturing development at Convair, will chair the panel on Titanium Joining at Lower Cost. Grossaint is organizer.

At the same session E. D. Green, Convair senior applied manufacturing research engineer, will give a paper, "Solid State Welding System for Structural Titanium Components."

Anthony J. Ocone, Fort Worth lines group engineer, will be on the panel, Applications of Computer Graphics.

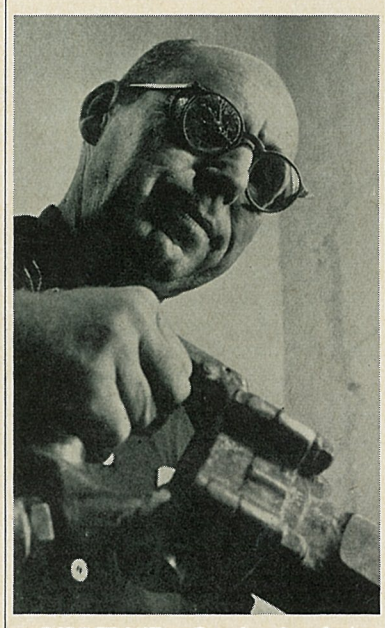
Fiske Hanley, Fort Worth manufacturing research supervisor, will give a paper, "Manufacturing Boron Composites," at the Non-Metallic Composite Structures session.

George L. Drake, chief of Convair life support engineering, and J. R. Burnett, design specialist, will give a paper, "Selection of an Oxygen Regenerating System to Meet the Demands of a Multi-Mission Program," at the session on Generation and Regeneration.

Callihan, Convair design specialist, will be organizer and secretary of the session on Supersonic Transport Propulsion Systems.

Dan Dudas of Fort Worth will talk on "Variable Geometry in a Military Aircraft" during the Variable Geometry Aircraft session and Frank M. Paget, Fort Worth design group engineer, will speak on "Mechanical Aspects of Variable Sweep Wings" at the Practical Aspects session.

R. F. Stepells of Canadair Limited will talk on Canadair's CL-215 Water Bomber program.



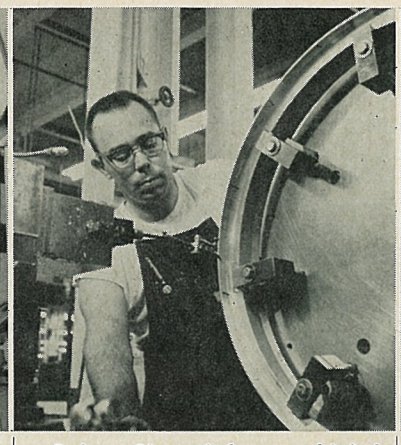
DIRECT HIT—Gordon Lembcke, maintenance leadman at Stromberg-Carlson Data Products, escaped unhurt when right lens of safety glasses was shattered by pieces of concrete, during reconstruction job at Hancock St. plant, San Diego. Lembcke was cutting through wall with air hammer at time of accident.

Vegas Reservations Will Close Friday

People planning to join the chartered bus trip to Las Vegas over the weekend of Sept. 29 to Oct. 1 have until this Friday, Sept. 22, to reserve accommodations.

Cost of round-trip transportation, room at the Aladdin Hotel, buffet breakfast and cocktails at the hotel, book of coupons is $36 a person. Call ext. 1111 KM.

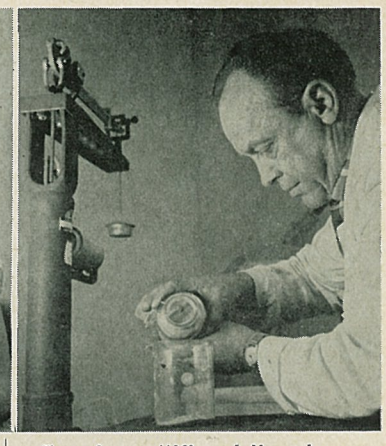
Sam Young, known to Convair plant-to-plant commuters as the "world's greatest bus driver," often drives 2,000 miles a week —including about 1,100 on 45 round trips between Kearny Mesa, AF Plant 19, and Lindbergh Field. The "greatest driver" plaque was presented in 1957 by a group of engineers who had missed him while he was on vacation. Young also has been pastor of New Mt. Olive Baptist Church in Brawley 10 years, driving there for Wednesday and Sunday services. He lives in Valencia Park with his wife, Elizabeth. Their two daughters are both married with homes of their own.



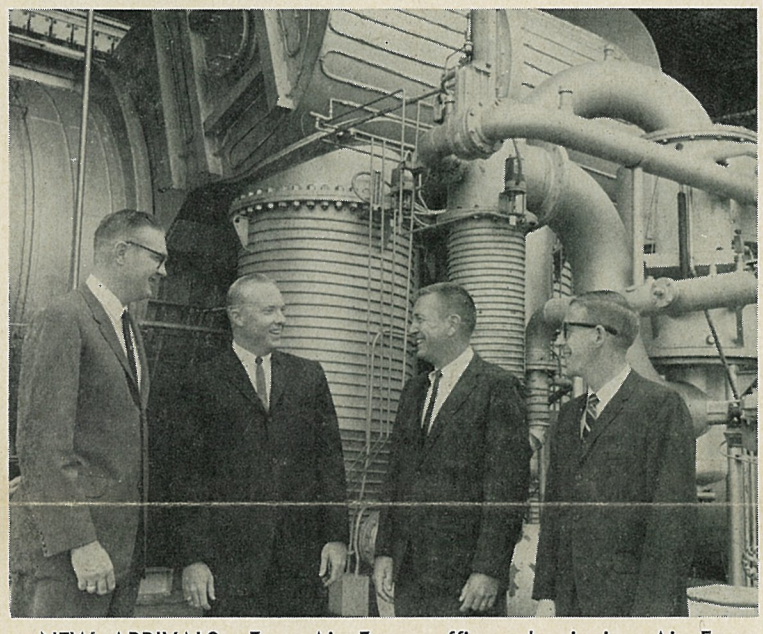
Robert Slater left a machinist's job with Menasco in Burbank this spring to come to Convair as an engine lathe operator in experimental machine shop at Lindbergh Field. He discovered San Diego while stationed at Camp Pendleton four years with the Marine Corps from 1956 to 1960 and decided to bring his family back here for good. A native of Omaha, Neb., he was a fireman there until his wife, Virginia, had enough of hard winters. Moving to Upland, Calif., he was on the fire department there until he changed careers. He writes articles and short stories in off-hours.

Conchita Muulei Martin, statistical clerk in Convair's art and editorial Dept. 517-0, was snapped filing art work for a new brochure. A native of Honolulu, she was schooled in Kapaa and Kauai, has been in the U.S. 12 years and with Convair eight, is married to a retired Navy chief, has three children and lives in Clairemont. An accomplished hula dancer since 10, she danced professionally 16 years in Hawaii and had her own troupe two years in Las Vegas. She visits relatives in Hawaii every other year. She is considered to be an expert in preparing kaula pig, main luau dish.

Sue Owen came to San Diego two years ago with her Navy husband, SK1 Harry Owen, who is assigned to the Fleet Training Center. They were stationed for over two years in Honolulu where their son, David, age 4, was born. Both are native Californians, Sue from Garden Grove and Harry from Los Angeles, and met while attending Fullerton Junior College. Sue has been with Convair since just after Christmas last year. She's one of the "fastest and best natured" typists, say her associates, that the low speed wind tunnel has ever had. Sewing is her main outside interest. She makes most of her clothes.



Few know "Kinny's" real name and fewer can spell it, Norman Kinnischtzke admits! Kinny, a Dept. 756 precision development technician, is shown weighing silver braze alloy in materials and processes lab at Lindbergh Field where he is assigned during the extendable boom program. He started as a helper in experimental 26 years ago, but soon rose to mechanic and on to test lab assistant foreman on the Model 7. He was involved in testing Atlas A and B series at Point Loma Test Site for several years. He, wife Mickey, and daughter Patti, enjoy hunting and fishing trips.



NEW ARRIVALS—Four Air Force officers beginning Air Force Education-With-Industry program at Convair are, from left, Maj. Alton J. "Jack" Hendrick, Capt. Robert H. Berry, Maj. Dale A. Johnston and Capt. Albert H. Smith Jr. Large spacecraft test lab vacuum chamber at Kearny Mesa is in background.

Four Air Force Officers Begin EWI 'Duty' at Convair

Four Air Force officers began a 10-month Education-With-Industry program at Convair this month under sponsorship of the Air Force Institute of Technology.

They are Maj. Alton J. "Jack" Hendrick, Maj. Dale A. Johnston, Capt. Robert H. Berry and Capt. Albert H. Smith Jr.

The four career officers are being briefed on division organization, management and products during an orientation period and will attend an Institute of Technology-sponsored symposium with "students" from similar programs at other industrial firms Oct. 11 through 13 in Los Angeles.

A later comprehensive series of departmental briefings will acquaint the four with all aspects of the division's operation.

Each will be assigned to specific departments and functions for on-the-job training in areas of specific interest during the third phase of the program.

Maj. Hendrick has been serving as a missile combat crew commander, with responsibility for a series of Minutemen missiles, since 1963 at Minot AFB, N. Dak., and previously served three years as a ground electronics (radar) officer at Inoges Air Station, Spain.

He was commissioned in 1955 after receiving his BS degree in industrial technology at Texas A&M. He received a master's degree in industrial management this year from the University of North Dakota.

Maj. Johnston has been stationed at March AFB, Calif., as a KC-135A navigator since 1964 but spent the last six months on an assignment in Southeast Asia. He previously had served as a KC-97 instructor navigator at McGuire AFB, N.J., and a B-47 combat crew member at MacDill AFB, Fla., and served as operations and maintenance officer at Walker AFB, N. Mex. He completed aviation cadet training in 1955 at Ellington AFB, Tex.

Johnston received his bachelor's degree in general education at the University of Omaha in 1963 and has had graduate studies in aerospace operations management at USC.

Capt. Berry, a native of San Diego, has been a production officer at Air Force Space Systems Division (now Space and Missile Systems Organization) in Los Angeles since 1963.

He attended Mission Bay High School and received his BS in industrial management from San Diego State College in 1963.

Capt. Smith has been in charge of the equipment reports analysis section at Air Defense Command Headquarters, Ent AFB, Colo., the past year and previously served three years as base supply officer at Itazuke, Japan.

A native of West Virginia. he studied accounting at the College of William and Mary and was commissioned after completing basic military training and supply officer school at Lackland AFB, Tex., in 1959-60. He also has served as a detachment commander and material project officer at Taegu, Korea.

Self-Designed Guard Quickly Proves Value

A guard for a radiac wheel blade, devised by a safety-minded sheet metal worker, probably saved a co-worker in Dept. 001 at Convair's Lindbergh Field plant from being badly cut last week.

It was the morning after the guard, designed by L. A. Gooseman, second-shift worker, was installed that it diverted pieces from a broken wheel from flying into the face of Sam Mazzilli on first shift.

The radiac wheel, used to cut rods or tubing to precise lengths, has a carborundum blade which revolves at a high rate of speed (3,450 rpm).

Gooseman, on loan from Dept. 732, noticed that the amount of blade actually used was a fraction of the three inches exposed.

"I felt that this was a potential hazard and decided to see if I could do something about covering as much of the blade as I could to protect the face and arms of the operator," he said. "My assistant foreman, Vern Beeson, was enthusiastic when I showed him my idea for a new guard and had it made and installed at once."

The guard is easily installed by fitting it under the screws holding the blade and securing it at the top with one master screw.

"This is the kind of safety ideas we are looking for," J. W. Garrison, chief safety engineer, said. "And, it is a perfect example of the safety-on-the-job attitude we are trying to instill in all of our employes. The man working at the machine or in any set of conditions knows better than anyone the risks and hazards of his particular job. And that man, if he has safety on his mind, can provide the solutions better than anyone else."

Television Classes Begin Next Month

A Convair man will be one of three instructors of classes conducted via television next month by the San Diego Adult Education Department on Channel 8.

Jim Hardison of Convair support contracts and Spanish instructor under the adult education program for several years, will teach a credit class in Spanish Saturday mornings from Oct. 7 to Dec. 9, at 7 a.m. Sessions will be rerun Fridays at 6:30 a.m.

Although anyone may view the classes, those wishing textbooks and other classroom materials will pay a $2 registration fee for each course. Call Pat Byrom, 233-0181, ext. 51, for information.

SAFE CUTTING—L. A. Gooseman of Convair sheet metal cuts rod on radiac wheel in Dept. 001 with fast-turning blade protected by guard he designed. Fragments below wheel are of blade which broke morning after guard was installed.

Courses Will Begin Week of Oct. 2 In Professional Development

Convair Management Club will offer 17 management and professional development courses at Kearny Mesa and Lindbergh Field beginning the week of Oct. 2. Registration deadline is Sept. 27.

W. F. Chana, chairman of the club's management development committee, said printed course descriptions and registration forms will be mailed to all club members. Others may obtain copies by calling the Management Club office, ext. 3146 KM.

Following is a list of the courses with information on number of sessions, times and locations for classes, and names of moderators or instructors and costs:

Principles of Managing (non-technical)—10 sessions; 6 to 8 a.m. Tuesdays, executive dining room KM, William Chana; breakfast $1; book $5 (refundable); non-members fee $5.

Principles of Managing (technical and professional)—10 sessions; 4 to 6 p.m. Wednesdays, Bldg. 17, Rm. 1 KM, John Ona; 4 to 6 p.m. Tuesdays, Bldg. 5, Rm. 338 LF, Ernest Kotnik; book $6 (refundable); non-members $5.

Principles of Managing (audio-visual series)—5 sessions; 7 to 8 a.m. Tuesdays, Bldg. 2 presentation room KM, W. E. Magnuson; 4:30 to 5:30 p.m. Wednesdays, Bldg. 5, Rm. 338 LF, Gene Devine; non-members $2.

Challenges for Management—12 sessions; 4:30 to 6:30 p.m. Wednesdays, Bldg. 26, Rm. 1 KM, David Epstein; book $7.50 (refundable); non-members $5.

Marketing and Salesmanship—5 sessions; 5 to 6 p.m. Wednesdays, Bldg. 17, Rm. 2 KM, John Magill; 4:30 to 5:30 p.m. Mondays, Bldg. 5 auditorium LF, Richard Sewell; members only.

Effective Writing — 8 sessions with emphasis on reports and proposals; 4:30 to 6 p.m. Tuesdays, Bldg. 17, Rm. 1 KM, Emory Thurston; 4:30 to 6 p.m. Mondays, Bldg. 5, Rm. 338 LF, Donn Olsen; non-members $2.

Effective Communication (film series)—5 sessions; 5 to 6 p.m. Tuesdays, Bldg. 17, Rm. 2 KM, Hal Rubin; members only.

Modern Memory Methods — 10 sessions; 6:30 to 9:30 p.m. Wednedays, Bldg. 2 presentation room KM; 5 to 8 p.m. Tuesdays, Bldg. 5 auditorium LF; instructors from Don Robinson School of Memory; members $25; non-members $40.

The New Wave in Management Mathematics—6 sessions; 4 to 6 p.m. Wednesdays, Bldg. 4 space sciences conference room, Col. AD-1 KM, Dr. Jack Maughmer; members only.

Computers, A Management Tool —6 sessions; 5 to 7 p.m. Mondays, Bldg. 17, Rm. 2 KM, David Rickert; members only.

Systems Engineering Principles —6 sessions; 5 to 7 p.m. Tuesdays, Bldg. 2 presentation room KM, and 4:30 to 6:30 p.m. Thursdays, Bldg. 5 auditorium LF, Robert Williams; members and non-members welcome.

Radio Hams Will Discuss New FCC Regulations at Club Meet

New Federal Communications Commission rules affecting amateur radio operators will be discusssed at the CRA Radio Club meeting at 7:30 p.m. tomorrow (Sept. 21) in CRA Clubhouse radio shack.

Members and prospective members are asked to bring QSL cards for display on a new membership board.

The Radio Club, which meets the third Thursday of each month, is considering offering a code class and theory studies and discussions to aid radio amateurs and would-be-amateurs with advancement.

Mgt. Club Plans 'Dog Race' Night

An evening at the dog races, with dinner and mariachi music, will entertain Convair Management Club members and guests at the Caliente Race Track, Tijuana, the end of next month, announced Mike Alianelli, club social chairman. Date is Saturday, Oct. 28.

According to Alianelli, the club's day at the horse races in June was such a success that another such occasion has been arranged. This is the first time in more than 10 years that the club has attended the evening dog races as a group.

A no-host cocktail period will start at 7:30 p.m. Dinner will be served on the Clubhouse enclosed terrace at 8:15 p.m. Races can be viewed from the terrace.

Dinner will feature southern fried chicken.

Cost is $2.50 per person with tickets now available from Boosters at all plants.

Two Win Trophies In Women's Golf

Ann Plummer and Lorene Waldron were trophy winners at the Sept. 9 links tourney of the GD Women's Golf Club which saw 16 playing nine holes at San Carlos course.

Other low scores in Flight A were Freda Magargal, Iris Oster, Marilynn Hersey; Flight B, Dorothy Johnston, Edith Mellett, Gerry Swanson. They received merchandise gift certificates.

Next month's tournament will be Oct. 14 at Sam Snead's Tecolote Canyon Course.

You Can Still Buy Grid Game Tickets

Tickets to the San Diego Chargers game with the Houston Oilers this Sunday, Sept. 24, will be on sale at employe services outlets until tomorrow evening, Sept. 21. Seats are 4.50 and $6.

Thirty club members and guests visited the radar air traffic control center at Miramar Naval Air Station Sept. 7. Federal Aviation Agency and Navy personnel who man the facility explained all phases of their operations. Similar tours will be scheduled in the future.

Additional information about the Radio Club can be obtained from club officers or by calling A. J. Halyburton, WB6TQF, at ext. 1846 KM or (home) 277-6779.

Ex-Badminton Champ Now in 'Hall of Fame'

Marten Mendez, national badminton champion of the early 1950s, has been elected to the Helms Hall of Fame which honors outstanding athletes of California. Nominations are made only every three years.

During his years of tournament play, Mendez was in manufacturing control at Convair division. He transferred to Electronics-San Diego at the time of its organization in 1962 and is now a production planner in manufacturing services.

Mendez' name was submitted by the Southern California Badminton Association for his performance during the years he was a member of the United States Thomas Cup teams, competing in international tournaments all over the world. He was a Thomas Cup team member in 1948, 1949 and 1952, and held the U.S. men's singles title in 1949, 1950 and 1952.

Slides of Sierras Trip To Be Shown

Color slides of mountain scenery enjoyed by 30 CRA Adventurers and family members during a recent week-long back-pack trip in the High Sierras will be featured at the club's meeting at 7:30 p.m. today (Sept. 20) in CRA Clubhouse auditorium.

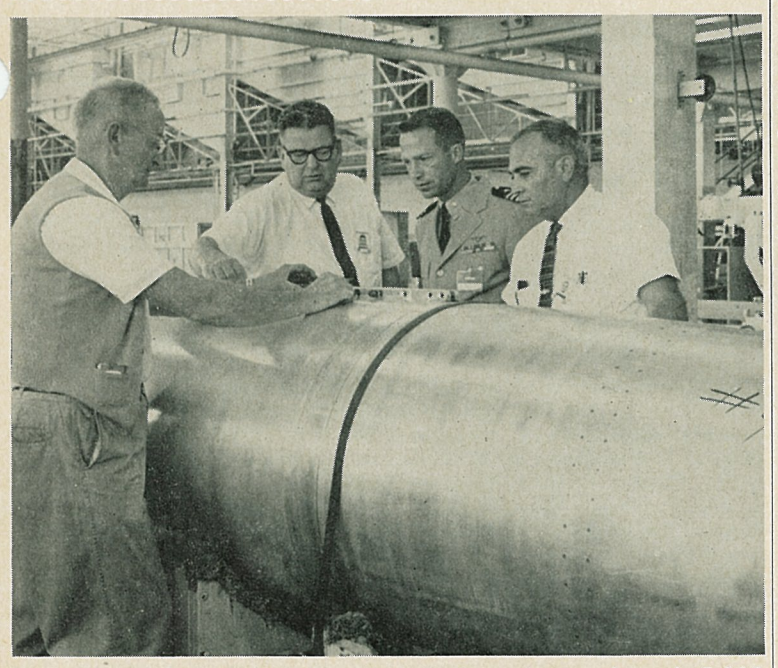
Dick Bowen, Adventurers commissioner, said members of the group averaged about 60 miles on hikes in the area and found trout fishing "fabulous" in the Golden Trout Lakes and Dragon Lakes.

Blackburn's 36 lbs. Leads Spearfishing

Larry Blackburn, Ken Swan, and Jim McGinnis were one, two, three in Delta Divers' spearfishing competition Sept. 10 at the Casa de Manana, La Jolla.

Blackburn brought in the biggest catch, 36 pounds, to top the 13 divers competing.

Jorge Zorrilla's team is leading in overall points for the year with a score of 223. Bob Nicholas' team is second with 206 and Phil Swanson's team still is in the running with 190.



REVIEW—Cdr. James O. Rice, chief production branch F-111 SPO, Wright-Patterson AFB, at Convair plant late last month to review AGE equipment, looks at near-completed FB-111A external tank with W. S. Stroud, Convair program manager for F-111 airborne elements, and Tony Berardini, assistant foreman. At left, Tommy Edwards, assembler, bolts center section.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Sept. 26. Call ext. 1071 LF or ext. 3322 KM.)

★ ★ ★

ADVENTURERS—Vacation slide showing by members at tonight's (Sept. 20) meeting, 7:30 p.m., CRA Clubhouse.

ARCHERY — Single American target shoot Sunday, Oct. 1, 1 p.m., CRA range.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB — 50-mile Oceanside ride Saturday, Sept. 23. Leave Salk Institute at 7:30 a.m. Call Delbert Wilson, ride leader, ext. 1584 LF or home 273-6255.

BONAIR FLYERS—Field trip to North Island NAS Sept. 30. Meet at main gate at 1 p.m.

BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS—Meeting tonight, Sept. 20, 7:30 p.m., Convair cafeteria, Lindbergh Field.

DELTA DIVERS—Lobster dive Oct. 15, Cardiff-by-the-Sea.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Meeting Oct. 4, 7:30 p.m., Floral Bldg., Balboa Park

HEALTH CLUB—Physical fitness program for all ages in CRA Clubhouse, Kearny Mesa. Open 9:30 a.m. to 10 p.m., Mondays through Fridays; 10 a.m. to 5 p.m., Saturdays. Call ext. 1111 KM.

ICE SKATING—General Dynamics skate night every Thursday, 6:15-7:45 p.m., Mission Valley Ice Arena.

PISTOL CLUB—Club shoot Sept. 24, 9:15 a.m., SD Police Pistol Range.

RADIO CLUB—Meeting Sept. 21, 7:30 p.m., CRA Clubhouse.

RIDING CLUB — Open all-day horse show Sept. 24. Gymkhana starts at 8:30 a.m., equitation in afternoon. Meeting Oct. 11.

RIFLE CLUB—Senior shoot Sept. 27, 7:30 p.m., Gillespie Field Range.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB—Water skiing after work Thursdays, 5:30 p.m.; Saturdays and Sundays, 9 a.m., Crown Point. Call Harry Eastman, 274-4982.

SQUARE DANCING—Last chance to enter new instruction class is Tuesday, Sept. 26, 8-10 p.m., CRA Clubhouse. Dynamic Eights dance every Thursday, 8-10 p.m.

TENNIS—Beginners instruction starts Tuesday, Sept. 26, 5-6 p.m., CRA courts. Call Bob Herold, ext. 2035 KM, or Bob Hintz, ext. 1542 KM. Fall tennis tourney starts Oct. 7-8.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB—Serra Mesa Club meets first and third Tuesday mornings, 7 a.m., Convair executive dining room, Kearny Mesa. Call Beth Underkofler, ext. 1718 KM.

WIVES—Potluck luncheon and craft session Sept. 27, CRA Clubhouse.

Fun Show Postponed To This Sunday

CRA Riding Club's open fun show, originally scheduled for last weekend, will be held this coming Sunday, Sept. 24, at the CRA horse ring, Kearny Mesa.

The date was changed to avoid conflict with another county horse show.

Gymkhana classes will start at 8:30 a.m. and continue throughout the morning. Equitation events will take place in the afternoon. Ward Keyes of Bonita will judge equitation.

All participants will have a chance to win silver goblets which will be given in drawings following both morning and afternoon contests. The goblets replace the high-point prizes. Trophies and ribbons will be awarded all top places. Entry fee is 75 cents a person for each class.

Six Riding Club members represented the Convair group in the Poway Day parade on Sept. 2. They were David Watson, Judy Watson, Sheila Payne, Charlann and Susan Harmer, Mickey Donahoo.

Homer in 7th Wins Slow Pitch Play-off

Pylons, National League slow pitch softball title-holder, took the CRA slow pitch championship by downing Electronics' Bombers in a two-out-of-three windup series. Bombers won the American League in tourney play.

Pylons won the final game 8 to 6 to take the plant title. Mike Osborn's two-run homer in the bottom of the 7th clinched the play-off.

An awards dinner last Friday at the Lindbergh Field plant executive dining room honored all league winners. Besides the Pylons and Bombers, Centaurs received trophies as winners of the fast pitch league.

2,200 Acres Leased For Gun Club's Use

CRA has arranged for hunting of quail, pheasant and chukar on a 2,200-acre lease 10 miles east of Ramona.

George Schmiedel, CRA business manager, said employes using the lease must have valid hunting licenses and be members of the CRA Hunting Club, which has a $3 annual membership fee.

Quail hunting will be offered in season with no additional charge. Pheasant and chukar will be offered Oct. 1 through March 31 with a limit of two pheasant and one chukar and a fee of $4 per bird.

Hunting dogs will be furnished on location for pheasant and chukar. Reservations and additional information may be obtained by phoning the CRA Clubhouse, ext. 1111 KM.

ARTIST—Virginia Porter, Convair statistical technician, designed insigne of renowned Blue Angels flying team while illustrator at Corpus Christi NAS 20 years ago.

Long 'Lost'

Designer of 'Blue Angels' Insigne Now in Estimating at Convair

The artist who designed the insigne for the Blue Angels, crack Navy flying team, has been discovered working in Convair's estimating department.

Virginia Porter, who nearly 20 years ago was given the assignment of conceiving a design for the Navy air demonstration team while an illustrator with the Chief of Naval Air Advanced Training Command staff at Corpus Christi, Texas, made contact with the group during its recent appearance in San Diego to fill the gap in the squadron's history.

"I was really surprised when the public affairs officer told me that the Blue Angels had hunted for years for the name of the person who had designed the insigne," Mrs. Porter said. "I have kept abreast of the squadron's appearances and command changes over the years, but never dreamed they would be interested in me."

Designing the emblem for Cdr. R. E. Rhodes, squadron leader of the Blue Angels in 1949, was her first assignment when she joined the Navy civil service at Corpus Christi NAS. The stylized gold and blue design showing four planes coming out of a barrel roll was her own suggestion after several other ideas were discarded. One, suggested by Cdr. Rhodes, was four beautiful angels wearing helmets and goggles!

During her several years as an artist at the Naval Air Station, Mrs. Porter did everything from designing personalized cards for the admiral to drawing cartoons for the base paper. She originated the cartoon character "Civy Joe," used in the paper and on posters for base promotional campaigns.

She has been with Convair since 1960. She enjoys her job as statistical technician fully as much as she did her career as an artist, she says. "After all, I majored in commercial art and minored in math in college, so I am only using both fields and like both different as they may be."

She keeps in practice though by doing all the charts used in her department, and, for her own pleasure, works in oils in her free time.

Tourists Back Home After Mexico Trip

Eighteen General Dynamics tourists returned Aug. 24 from two weeks travel through Mexico on the seventh summer trip sponsored by CRA and conducted by Convair's Jim Hardison. Hardison schedules two trips each year to Mexico City and Acapulco for General Dynamics people. The winter tour is usually held over the Christmas holidays.

Tennis Club Plans Beginner Lessons

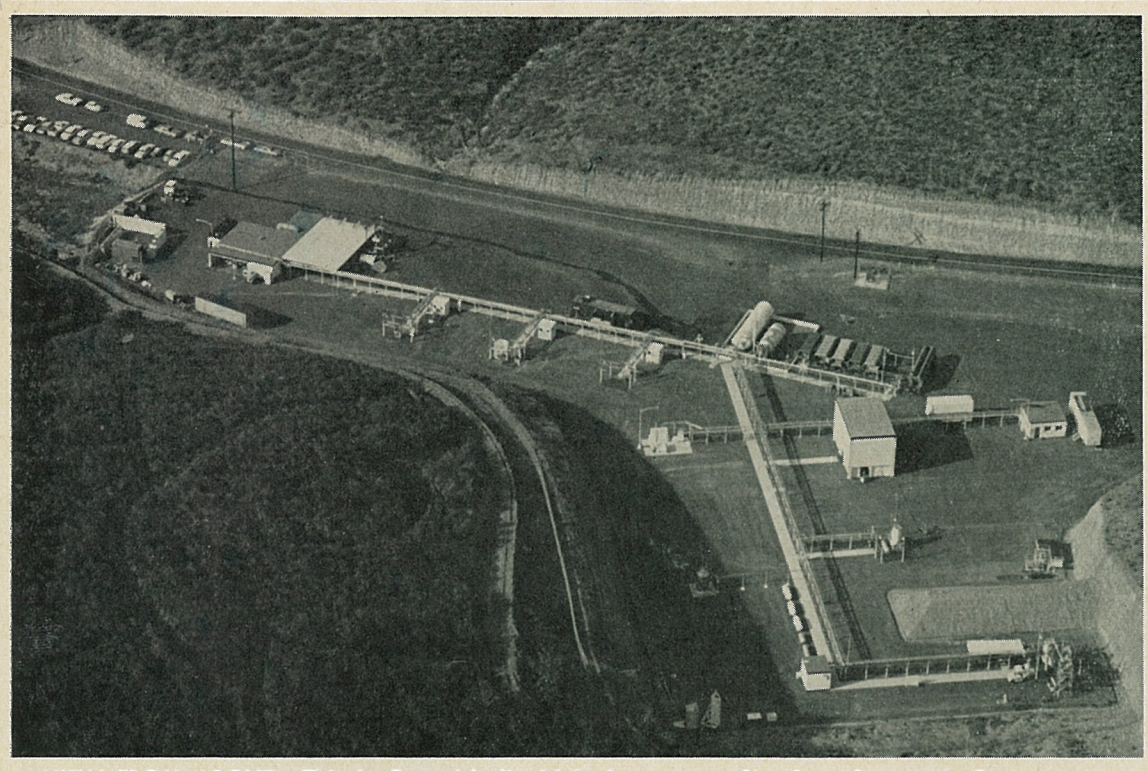
CRA Tennis Club has scheduled a five-week class for beginners from 5 to 6 p.m. Tuesdays and Thursdays beginning next week (Sept. 26) on the CRA courts at Kearny Mesa.

The class will be limited to 16 beginners. Reservations can be made by phoning Bob Herold, ext. 2035 KM, or Bob Hintz, ext. 1542 KM.

Fall Tennis Tourney Will Begin Oct. 7-8

A fall tennis tournament, sponsored by the CRA Tennis Club and Convair Management Club and limited to General Dynamics employes and members of their immediate families, will begin Oct. 7 and 8.

Men's and women's singles and doubles matches in advanced, intermediate and novice categories will be scheduled. Entry forms can be obtained at the CRA Clubhouse or by calling Bob Herold, ext. 2035 KM, or Cecil Norwood, ext. 2766 KM.



VIEW FROM ABOVE—This is Convair's liquid hydrogen test Site B at Sycamore Canyon on outskirts of San Diego. One of most versatile facilities of its kind, site includes eight test pads and "tank farm" for storing cryogenic liquids and gases.

Convair Liquid Hydrogen Test Facility Among Most Versatile in Entire U.S.

One of the most versatile liquid hydrogen test facilities in the United States has been developed by Convair division at Site B at Sycamore Canyon near San Diego.

Major current projects are for production, reliability and qualification testing of Saturn 4-B vent and relief and fill and drain valves and Centaur vent and relief valves.

The site also is used for cryogenic-temperature testing of material properties, solenoids, propellant ducts, hydrogen vent fins and balanced thrust disconnects, and for shaped-charge and super-insulation research.

Subcontract customers include NASA's Langley Research Center, Douglas Aircraft Co., the Rocketdyne division of North American, and Straza Industries.

More than 75 tests have been run on valves for the Saturn 4-B under Douglas subcontracts totaling more than $1½ million, with each being completed ahead of schedule. Other tests under the Saturn subcontracts are scheduled through 1968.

Saturn 4-B vent valve functional testing is accomplished at Pad D at the site through use of a 200-cubic-foot, vacuum-jacketed tank. Flow of gaseous hydrogen at minus-400-degrees Fahrenheit at 13 pounds per second at times creates 300- to 400-foot vapor clouds.

Small "coupons" of stainless steel are tensile loaded in liquid hydrogen at the site to verify skin strength for each Centaur vehicle.

Site B consists of eight test pads interconnected to a central propellants "tank farm" by an overhead manifold feed system. Each pad has liquid hydrogen, liquid nitrogen, gaseous helium, gaseous nitrogen, water, air and central vacuum service.

The "tank farm" includes 13,000-gallon liquid hydrogen and 7,000-gallon liquid nitrogen permanent storage tanks and portable tube trailers holding 100,000 cubic feet of gaseous hydrogen, 80,000 cubic feet of gaseous nitrogen, and 400,000 cubic feet of gaseous helium.

Vibration testing with liquid hydrogen or liquid nitrogen is accomplished with a Convair portable vibration system. An 80-channel electronic analyzer-equalizer in Bldg. 15 at Kearny Mesa has been linked with the vibration system's control console at Site B by six telephone lines for increased reliability of tests in which vent valves are being vibrated at up to 7,500 pounds force at 5 to 2,000 cycles per second. A manually controlled 40-channel analyzer-equalizer was used previously.

A NASA-owned trailer-mounted clean room at Site B is used for on-site analytical processing of test fluid contamination samples, test specimen assembly work and special testing requiring Class B clean environment.

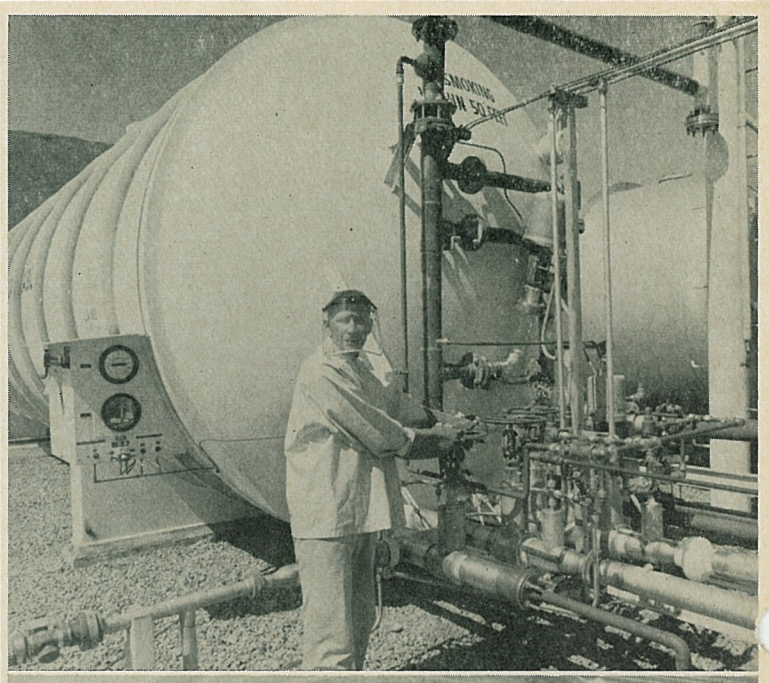
A NASA-directed "super clean" program was instituted at the site for production testing of Centaur vent valves. Test articles are transported between the clean room and other test facilities in a super-clean handling cart.

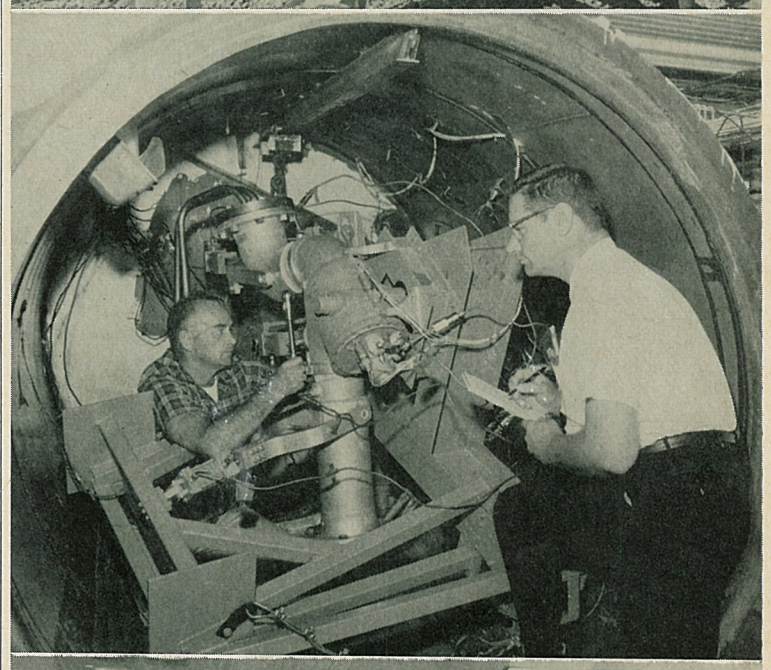
Detailed checklists to insure against contamination are signed on a step-by-step basis during each test by the technician and witnessing inspector.

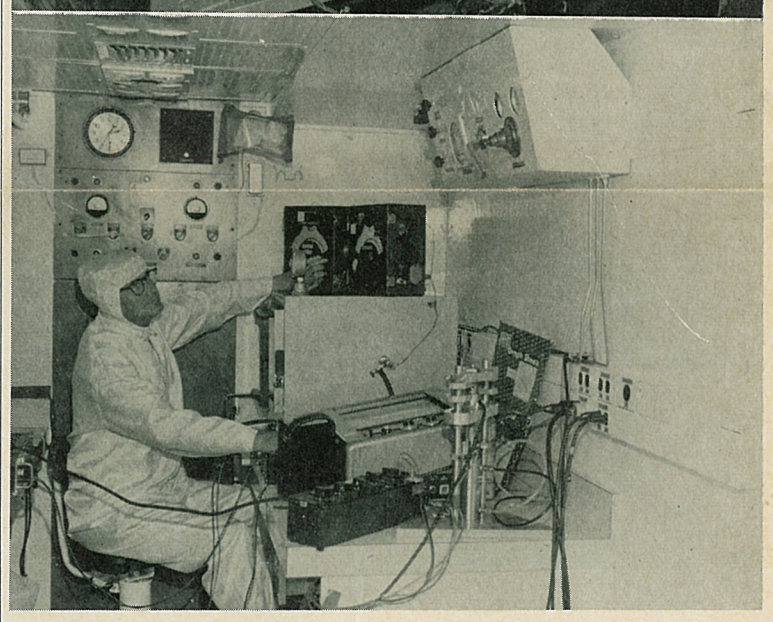
James A. Denneny, cryogenics group engineer, is resident engineer in charge of all test activity at Site B. The site is part of the Dept. 785-1 mechanical components test laboratory complex under supervision of Robert Tuttobene, test lab group engineer, which also includes laboratories at Kearny Mesa, Lindbergh Field and Harbor Drive Facility. Tuttobene reports to P. T. Gardner, manager of engineering test facilities.

Site B is staffed by about 40, including engineers, technicians, mechanics, inspectors and contractor personnel. Don Dayharsh, Dept. 756-0 assistant foreman, is resident supervisor of engineering support personnel.

Robert Swanson is Convair program manager for Douglas test programs and William McPike is coordinator for Centaur tests.







ON SITE—In top photo Russell Morisette, Convair Dept. 756 test lab mechanic, adjusts flow of liquid hydrogen from tank. Center: valve for Saturn 4-B is positioned by Richard Renick, Dept. 756 leadman, for test, as Harold G. Brittain, senior test lab engineer, watches. Bottom: Al Marler, engineering test mechanic at Site B, vacuum dries test specimen in environment-controlled clean room in trailer.

FLEDGLING—Cheryl Desmond (Dept. 14), newest member of Pomona, Calif. division's Dynair Flying Club Inc., tests controls of new Cessna 172 Skyhawk. Club has fleet of four planes available to members.

Old Photos Sought For Vultee Reunion

Vultee Field alumni are urged to sort out their old photographs, models, and other mementos of their association with the Vultee division for display at the 20th anniversary reunion next month.

Anyone with such material is asked to contact Gordon Jackson, ext. 1570, Convair Lindbergh Field plant, mail zone 533-21, San Diego.

The reunion will be held Oct. 7 at Los Amigos Country Club, 7295 Quill Drive in Downey, Calif., site of the old Vultee plant.

All wearing an authentic ID badge of Vultee Field days will receive a free drink.

Reservations are to be sent to the Vultee Club, P.O. Box 4265, Whittier, Calif. 90605.

GD Motivation Group Will Brief Japan Management Assoc. Team

A six-member Japan Management Association zero defects program study team will confer with the General Dynamics' motivation working group Oct. 10 in New York City.

W. E. Magnuson, chairman of the motivation working group, said the visiting industrialists will be briefed on various zero defects-type programs being used by General Dynamics divisions.

The Japanese team is meeting with representatives of about 20 major business and industrial firms while on a month-long tour of the United States.

Eugene Keefer, Film and TV Chief, Dies

Eugene C. Keefer, chief of motion pictures and television for Convair, died Sept. 1 while returning to San Diego by air from Quincy, Mass., where he had been directing filming of a documentary on the Apollo Instrumentation Ships.

He had been a Convair employe 24 years and produced more than 800 films for General Dynamics and various governmental agencies.

Mrs. Keefer is a clerk-stenographer in material contracts Dept. 802-0 at Kearny Mesa.

Engineer Authors Technical Article

A Pomona division engineer is the author of an article in the Sept. 6 issue of EDN, a national electronics trade magazine. D. E. Cole of missile systems dynamics has written "Tracking Filter Lifts Signal From Noise."

Cole, a design specialist, has been employed at General Dynamics for 11 years. He attended the University of California at Los Angeles where he received his B.S. and M.S. degrees in engineering.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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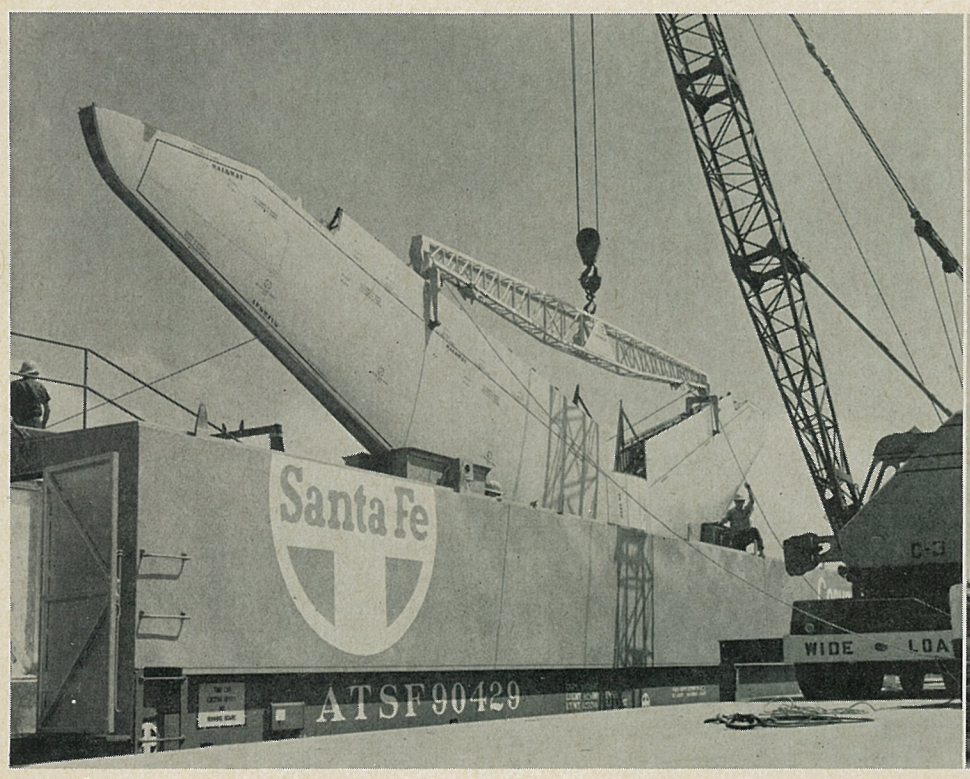
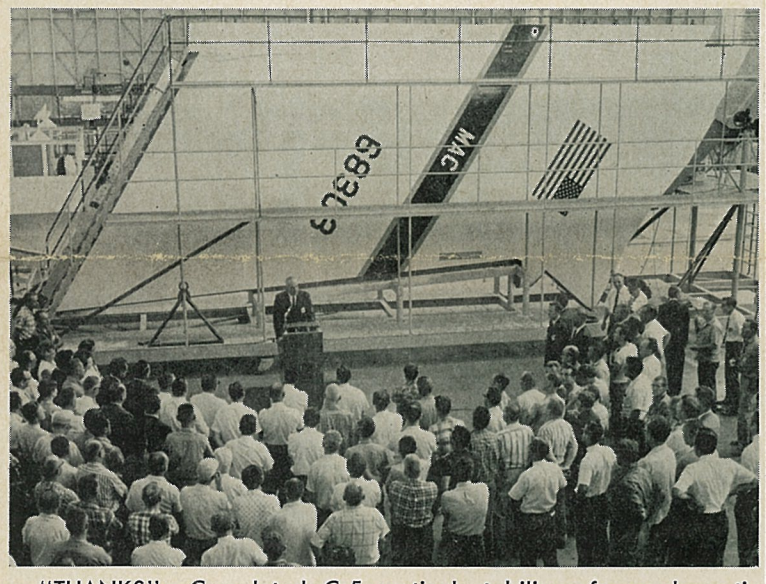


LOADING—Huge stabilizers for first C-5 empennage built at Convair division for Air Force jet cargo transport are loaded into specially-built Santa Fe railcars at San Diego, Calif., for shipment to Lockheed-Georgia Co. At right, vertical stabilizer with Material Air Command stripings is swung into 90-ft. hydroshock car. At left, horizontal stabilizer is lowered into place. Cars are due at Marietta, Ga., today (Oct. 4).



"THANKS"—Completed C-5 vertical stabilizer forms dramatic backdrop for Convair Division Manager Jack L. Bowers as he praises all who contributed to completion of first C-5 empennage on schedule.

Special Railcars Carry First C-5 Empennage

Two specially-built railcars are due to pull into Lockheed-Georgia Co.'s plant at Marietta, Ga., today (Oct. 4) bearing the stabilizers of the first C-5 empennage built at Convair division of General Dynamics.

The carefully-plotted journey which began at San Diego, Calif., site of Convair, late last week took the huge blue and white cars 3,046 miles across the United States. The route was laid out across the southern part of the country, avoiding mountainous terrain, low bridges, tunnels, and narrow passes to give as much clearance as possible for the 90-ft. long cars.

Convair received daily reports from way points to monitor progress.

Turn-around time is 24 days. Eventually there will be 8 cars transporting C-5 empennages cross-country when production reaches its peak sometime in 1970.

The special hydroshock cars were furnished by the Santa Fe rail company especially for C-5 empennages. They were built from the rails up to Convair design.

Convair package engineering section of Dept. 833, under direction of J. J. Janssen, synchronized development of plans for the cars (or "envelopes for assemblies" as they are termed in packaging circles) with the engineering design of the empennage components.

(Continued on Page 2)

Bowers Praises C-5 Crews For Meeting Skeds

Convair Division Manager Jack L. Bowers praised all departments responsible for meeting schedules to complete the first C-5 empennage on time.

"You must all have a good feeling of accomplishment," he told production workers on the C-5 assembly line.

"You people have worked hard and it's with a great deal of appreciation that I thank all departments for the complete cooperation that has produced the world's biggest empennage for the world's biggest plane by its scheduled date.

"The program to date has been a real accomplishment. We have had our schedule problems, true, but we have achieved good quality, good technical performance, good design, and have put together a good product.

"Now, we can't afford to rest on our laurels. We've completed the first item, but we have many more to build. We must keep turning them out at or below scheduled costs, and on time!"

'Fair Share' Goal For Con-Trib Set

Convair division's annual Employes' Con-Trib-Club membership campaign begins tomorrow —with Fair Share commitment by at least 85 per cent of the division's 13,850 employes as its goal. Fair Share is 8/10 of 1 per cent of each employe's salary.

Supervisors were briefed on campaign plans in meetings yesterday (Oct. 3) at Kearny Mesa and Lindbergh Field by Jack L. Bowers, Convair general manager and campaign chairman, and M. V. Wisdom, director of industrial relations.

Employes already giving Fair Share through Con-Trib-Club will receive special "check" pins to wear during the campaign, which runs through Oct. 20.

Others will receive pledge cards from departmental campaign coordinators for use in pledging by regular payroll deductions.

Each employe also will receive a brochure describing Con-Trib-Club and its advantages and giving a breakdown of the club's distribution of $7,323,129 in contributions since July, 1962.

Con-Trib members also receive window stickers for display at their homes signifying that the family contributes to all approved charities through the club.

More than 100 health, welfare, youth and community and family service agencies in San Diego County receive support from Con-Trib. Funds also are distributed to agencies in other areas where Convair has groups of employes and off-site bases.

Con-Trib-Club grants are used to support research for control of dread diseases, assist crippled children and victims of other diseases, curb juvenile delinquency, rebuild broken homes and help others in a thousand different

(Continued on Page 2)

FAIR SHARE "CHECK"—Marylyn Ruebel, secretary, displays large replica of gold "check" pin to be given Convair employes pledging Fair Share giving in Con-Trib-Club membership drive.

Contract to Continue Ocean Data Research

Convair division has received a follow-on contract in the amount of $1,218,000 to continue Convair's ocean data station research and development for the Office of Naval Research.

The contract will continue systems development for the division's two prototype buoys, Alpha and Bravo, through the next year in preparation for a scientific mission in the North Pacific Ocean. The ultimate mission will be aimed specifically at studying causes of physical changes in the upper layers of the ocean in that region.

During the next year Convair's ocean data-gathering buoys will be outfitted and prepared for an exploratory deployment prior to large-scale North Pacific experiment which will be carried out in conjunction with Scripps Institution of Oceanography.

Alpha and Bravo will each be moored within a cluster of auxiliary buoys. They will be deployed initially on an east-west line about 1,000 miles from each other over 1,000 miles north of Hawaii. The Mobile Data Center probably will be located in Hawaii within range for interrogation of both buoys.

The buoys will remain on station eight months for data acquisition in both summer and winter periods, according to Ken

(Continued on Page 2)

LIFE INSURANCE UPPED FOR HOURLY

General Dynamics has increased the amount of life insurance for hourly employes to a maximum of $15,000 as part of the Corporation's continually improving insurance program.

Effective Oct. 1 the Company-paid amount of insurance for each hourly employe was increased from $5,000 to $6,000.

(Continued on Page 2)

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Sept. 15 and Sept. 30.

Thirty-year: Dept. 403, R. E. Bruce.

Twenty-five-year: Dept. 031, W. A. Miller; 056, J. R. Crenshaw; 059, Ruby C. South; 130, J. H. Cooper; 193, C. E. Willcoxson Jr.; 300, W. Heinold; 400, E. E. McDaniel; 401, L. W. Massey; 403, R. C. Emerson; 451, V. D. Smith; 452, W. S. Sherman Jr.; 588, E. G. Wygant; 592, R. F. Holmes; 763, E. P. Copeland; 843, E. L. Vogt; 978, F. J. Lay.

Twenty-year: Dept. 002, Ellie F. Jenkins; 010, Mary S. Powers; 015, Murl L. Cochran; 059, G. Bradley Jr., Isabelle C. Corbett, H. F. McKay, E. F. Toombs; 130, J. J. Jackson; 149, F. R. Porter; 250, J. W. Blackwell, A. Sambrano Sr.; 300, D. D. Guest; 518, Fern F. Barton; 833, S. Saiz; 840, A. A. Atha; 842, R. E. Reynolds; 985, M. B. Stroud.

Fifteen-year: Dept. 027, J. W. Barham; 101, Dolores L. Hall; 250, J. W. Huss; 400, C. A. Digilio; 401, E. L. Patton, P. L. Underwood; 460, R. O. Barry; 508, M. B. Eilert Jr.; 511, D. W. Simmons; 517, W. H. Goldsmith; 574, C. R. Roberson; 584, E. W. Schwartz; 595, H. J. Wasilk; 731, Maxine B. Emrick; 763, G. Torregrosa; 780, J. W. Slagle; 831, A. J. Ross; 832, Margaret J. Cox; 833, Merva N. Peterson; 834, La Von K. Hibbs; 835, P. F. Sepe Jr.; 860, W. T. Hudson; 951, D. D. Stenger; 956, R. W. Eichmann.

Ten-year: Dept. 015, E. A. Bowers; 016, Irene M. Eshbach; 058, M. L. Williams; 141, L. R. Simpson; 142, J. K. Richards; 200, F. J. Stewart Jr.; 518, LaWanda E. Lambeth, Jean C. Nelson; 521, Connie M. Franklin; 524, Ella M. Bomgardner, Dorothy T. Moore; 533, T. R. East; 565, J. D. Jones; 566, C. J. Grant; 579, B. H. Moore; 583, L. Tramonti; 780, Edna Bebb, Mary G. Keltner; 810, R. L. Morris; 961, R. S. Ringwald; 966, Joyce C. Linville; 979, L. S. Hough; 985, H. A. Richards.

ELECTRONICS

Twenty-five year: Dept. 422, J. L. Valverde.

Twenty-year: Dept. 422, J. A. Riley.

Fifteen-year: Dept. 103, Vicki S. Allen; 424, W. A. Duzyk; 425, V. H. Johnson; 613, J. R. Blackwood; 711, T. B. Field; 921, J. T. Hamilton.

Ten-year: Dept. 423, Alice Preece, Geraldine R. Taylor; 562, T. G. Dugger Jr.; 713, L. Hancock.

STROMBERG-CARLSON

Fifteen-year: Dept. 88, C. E. Frijus.

Ten-year: Dept. 85, J. D. Haflinger.

Awards

CONVAIR

Employee Suggestion awards approved for the week ending Sept. 1.

Dept. 015-0, K. L. Jewell, L. W. Kirkendall; 022-0, J. F. McClure; 141-2, W. J. Knox; 142-1, A. G. Infeld, J. Matiash; 143-1, L. D. Green; 144-2, R. F. Luth, R. C. McCarty; 149-3, J. Ratajkowski; 454-0, G. W. Lyst; 820-0, N. D. Jones; 979-1, J. F. Dean; 979-6, M. F. Sargent.

Employee Suggestion awards approved for the week ending Sept. 15.

Dept. 015-0, F. E. Slayton; 027-0, P. W. Byrd, F. H. Stine; 031-0, J. Nonzeta, E. Weems; 049-0, W. R. Panke; 141-2, S. Cohen; 142-1, J. W. Goddard Jr., L. E. Johnson; 144-1, C. R. Gilbert, M. L. Jamison, S. G. Jenkins; 149-2, W. L. Bilbrey; 149-3, J. J. Curci Jr.; 191-0, J. D. Burns (two awards), P. R. Grokoest (two awards); 194-0, D. H. Leonard; 250-2, R. L. Clark; 400-7, A. S. Cwiek; 401-5, O. G. Gregersen, R. A. Taylor (two awards); 454-0, G. W. Lyst, M. A. Revetti; 507-0, R. L. Black; 733-0, W. R. R. Russell; 780-1, E. V. Cooper; 810-0, W. R. Stanley; 957-2, W. L. Vierra.

Employe Suggestion awards approved for the week ending Sept. 22.

Dept. 001-0, F. M. Heaton, E. C. Mackey; 015-0, A. J. Capuccini, M. Carmichael, L. W. Tracy; 016-0, M. V. Archibeque; 020-0, E. A. Marvel Jr.; 031-0, J. W. Burgreen, J. Nonzeta (two awards), F. J. Stolte; 059-1, F. A. Oddo; 059-7, H. G. Easter; 143-3, A. M. Contreras; 144-1, L. G. Menches; 144-2, G. W. Ash; 149-0, M. B. Fickas; 191-0, E. L. O'Neill; 194-0, M. A. Silva; 250-0, M. S. Brown; 250-3, B. A. Rusk; 401-1, H. S. Hagen; 420-8, S. J. Williams; 519-0, C. Greve Jr.; 579-2, R. H. Holland; 715-0, V. G. Harding; 810-0, L. G. Johnston; 810-1, R. T. Myers; 820-0, G. R. Walker; 833-2, M. M. Wood; 842-0, M. C. Hight, R. C. Ribby; 850-0, F. C. Weismantel; 954-1, R. L. Creamer; 966-4, H. A. Hunter; 988-4, W. F. Faupel.

ELECTRONICS

Employe Suggestion awards approved last month.

Dept. 4102, Millie P. Buffat; 4416, G. J. Urcheck; 4422, D. J. Cloutier and W. J. Thomas (joint award), D. R. Miller; 4423, E. Palmer; 4424, R. F. Navarez; 4613, H. A. Speigel; 4713, R. D. Herring, R. M. Trent; 4921, J. E. Slean.

Invention Disclosures

CONVAIR

ANDERSON—J. D., Dept. 574-4. Method of Recording Composite Displays on Film From Sequential Displays on a Cathode Ray Tube.

BROWN—J. L., Dept. 756-0. Spring Lip Seal on Modified Flare Type Tube Fitting.

FREDERICK—N. L., Dept. 491-0, Vari-size Weld Systems.

HERSH—M. S., Dept. 572-2, High Pressure Tube Closure Weld Method.

MAXFIELD—C. W., Dept. 733-0. Tube Flare Finishing Tool.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

In-Plant Training

ORIENTATION

NEW EMPLOYES — Educational services staff. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Mondays, Oct. 9 and 23. Lindbergh Field, ext. 491, Bldg. 14 auditorium, second shift, 4:30 p.m., Tuesday, Oct. 10; first shift, 8 a.m., Tuesday, Oct. 17. AF Plant 19, ext. 491 LF, Bldg. 3, 1st mezz., Col. B-14 conference room, 8 a.m., Thursday, Oct. 19.

PROFESSIONAL/TECHNICAL

DAMAGE PREVENTION — Kearny Mesa, first shift, Tuesdays and Wednesdays, 8-9 and 10-11 a.m., Oct. 4, Bldg. 17, Room 8. Lindbergh Field, first shift, Wednesdays and Thursdays, 8-9 and 10-11 a.m., Oct. 11, 12, 18, 19, 25, 26, Nov. 1, 2, 8, 9, 15, 16, Bldg. 14 auditorium. For information call W. F. Weidenfeller, ext. 1931 KM.

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Educational services office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Retirements

CONVAIR

MACKES—Helen S., Dept. 840-0. Seniority date July 21, 1947, retired Sept. 15.

POLLOCK—Patricia C., Dept. 970-0. Seniority date April 2, 1942, retired Sept. 17.

ROUSH—Thomas M., Dept. 400-3. Seniority date Nov. 3, 1950, retired Sept. 8.

RUSSELL—Juanita P., Dept. 113. Seniority date Sept. 11, 1950, retired Sept. 15.

Rider-Driver

CONVAIR

RIDE WANTED—From Jackson Dr. near Lake Murray Blvd. to Kearny Mesa, 7:30 to 4:15 shift. Phone C. Fitch, ext. 1847 KM or (home) 466-5955.

RIDE WANTED—From Harbor Drive Test Site to San Diego State College area—4:00 p.m., Tuesdays and Thursdays. Phone Al Somerville, ext. 1032 or (home) 277-4693.

RIDE WANTED—La Jolla to KM plant, 2nd shift. Phone Grace Cline, ext. 1312 LF or (home) 454-0627.

Personals

CONVAIR

The family of Charles Whitlock (retired 1964) gratefully acknowledges your kind expressions of sympathy following his death.

* * *

The family of Fred S. Harger (retired) thanks you for your thoughtfulness at his death. Your beautiful flowers meant so much to us.

Sophie L. Harger

* * *

The family of Ernest Norden, Dept. 250-2, gratefully acknowledges your kind expressions of sympathy following his death.

Births

CONVAIR

KRAMER—Daughter, Karen Sue, 7 lbs. 5 oz., born Sept. 6 to Mr. and Mrs. T. F. Kramer, Dept. 541-0.

Deaths

ELECTRONICS

BOS—Gretchen A., Dept. 4423. Died Sept. 12 after extended illness. Survivors include a son, Paul R., a sister, and one brother, all of El Cajon.

Value Engineering Specialists Speak

Four Convair division value engineering specialists were among speakers at a VE seminar sponsored by the San Diego chapter of the Society of American Value Engineers (SAVE) Sept. 23 at the Stardust Hotel.

Warren J. Ridge of Dept. 192-0, SAVE chapter president, was host and presented an introduction to value engineering. E. D. Heller, manager of cost reduction and value control for Convair, discussed functional definition and evaluation.

Lloyd G. Curtis, senior design and value engineer in Dept. 954-0, talked on challenging of requirements and Everett Lindem, education specialist in Dept. 130-3, discussed creativity, habits and attidudes.

Other Convair personnel attending were James S. Luster and Harvey Seibert, both Dept. 954-0.

Survival Equipment Symposium Conducted

Several General Dynamics employes were among 500 attending the fifth annual symposium of the national Survival and Flight Equipment (SAFE) association last week (Sept. 26-28) at the Stardust Hotel in San Diego.

Robert R. Brazell, senior research engineer in Convair's life sciences Dept. 592-0, is national president and was symposium co-chairman.

Copies of the proceedings may be ordered from SAFE headquarters in the Aerospace Museum in San Diego or by phoning Brazell, ext. 896 KM.

Convair Personnel at Vandenberg Recall Fine Achievement Record

Convair division's nearly 400 employes stationed at Vandenberg AFB, 165 miles north of Los Angeles, have seen a lot of "missile methodology" and aerospace history in the making during the past decade and still play an important role in development and testing of new scientific and defense technology.

Convair's principal mission at VAFB is to provide launch and support services for Air Force Space and Missile Systems Organization (SAMSO) programs that use Convair's reliable Atlas as launch vehicles.

These programs include Advanced Ballistic Re-Entry Systems (ABRES), Nike-Zeus classified missions, and launch of Convair-built Orbital Vehicle One (OV1) scientific satellites for the Air Force Office of Aerospace Research.

Convair and Air Force launch crews as of last week had launched 188 Atlas missiles and launch vehicles from Vandenberg since the first, Atlas 12-D, thundered off its launch pad to a target in the Pacific on Sept. 9, 1959.

D. L. Fagan, manager of Convair operations since 1963, was launch conductor for the first flight. W. F. Miller, now Convair Atlas D/E/F manager, was serving as Convair's first operations manager at VAFB at that time.

Other previous base operations managers were the late Tommy Zannes (1960-62) and K. E. Newton, now Convair Eastern Test Range (ETR) operations manager, (1962-63).

Several at VAFB have been affiliated with the Atlas program since it began, including C. A. Johnston, chief of launch operations, who assisted with launch of the first Atlas, 4-A, June 11, 1957, at ETR.

Convair operations date back to 1958 when Vandenberg, then Cooke AFB and a former Army infantry training camp, underwent renovation for its role as a missile center with the former Astronautics division as integrating contractor for construction and installation of the Atlas weapons system for the Strategic Air Command (SAC).

After the 576th Strategic Missile Sq. and the Atlas achieved operational status in 1959, Convair remained to support operational readiness. Different types of launchers were "proofed out" prior to their use at SAC installations across the country. More than 2,000 Air Force officers received Atlas operational readiness training at VAFB.

In 1962, when the Atlas was retired as a weapons system, Atlas launch complexes at VAFB were converted for use as research and development launch facilities.

Convair personnel at Vandenberg have achieved many enviable records, including an industrial safety record that has resulted in national acclaim. Last Sunday (Oct. 1) marked the completion of four straight years without a lost-time accident.

Almost $3 million in cost reduction has been achieved by Convair personnel at VAFB during the past three years. The 1965 record—$1.7 million was the highest of any Convair department.

Vandenberg employes, through the Con-Trib-Club, have contributed more than $150,000 to community service and health agencies in the area since 1960.

Some of the many milestones in which Convair personnel at Vandenberg AFB take pride include:

August, 1959—first Atlas launch complex turned over to SAC.

September, 1959—Atlas achieved operational status; first SAC launch.

January, 1962—two Atlases launched same day.

March, 1962—late President Kennedy witnessed Atlas launch.

July, 1962—Atlas set distance record from Vandenberg, 7,000 miles.

August, 1962—first multiple launch; two Atlases fired minutes apart.

August, 1962—first Atlas launched from silo configuration complex.

December, 1963—three Atlas launchings within a 24-hour period.

April, 1965—launch of SNAPSHOT test nuclear reactor by an Atlas.

October, 1965—first OV1 launch.

March, 1966—first dual OV1 launch (OV1s 4 and 5).

December, 1966—first PRIME (precision recovery including maneuvering entry) vehicle launch.

July, 1967—first triple OV1 launch (OV1s 11, 12 and 86).

Contract Continues Ocean Data Work

(Continued from Page 1)

Samples, Convair ONR project manager for the ocean data station program. Data acquired during that time will yield the information needed for preparing the buoys for the large-scale study which could stretch over four or five years.

Alpha now is on station off the Southern California coast, 15 miles from La Jolla, Calif., for long-range telemetry tests. It has been successfully interrogated by the Mobile Data Center from various points along the West Coast between San Diego and Seattle and, last month, responded to interrogation by MDC from Washington, D.C., 2,500 miles distant.

The buoy will be retrieved early next year for inspection, evaluation, and preparation for the new mission.

Bravo completed deep water mooring tests off Bermuda this spring and was towed to San Diego for refurbishment and installation of the ocean data acquisition system similar to that installed in Alpha. Hull, mast, and all systems will be refurbished as needed and Bravo's hull will be modified to the same configuration as Alpha's to include design improvements developed since Bravo was completed three years ago.

Convair's overall ocean data station program is under Robert F. Devereux, program manager.

Life Insurance Upped For Hourly

(Continued from Page 1)

At the same time, the amount of life insurance paid for by the employe was increased from a maximum of $8,000 to $9,000. All who signed for the additional life insurance, now automatically have the added coverage at a small increase in premium.

The exact amount of insurance available to an hourly employe depends on the base hourly rate. Additional information can be obtained from employe services.

Cost of hourly dependent coverage has been reduced from $2.68 to $2.33 a week, effective the first of this month.

Special Railcars Carry First C-5 Empennage

(Continued from Page 1)

Some dimensions of the components themselves were governed by transportation restrictions and clearances, J. W. McPheeters, chief of stores and traffic, pointed out.

Cars for the C-5 components are 30 feet longer than the special cars built and used over the last six years for transport of C-141 empennage components, the largest of their kind at that time. Height of the C-5 cars is 19 ft., 8 in., over-rail. Width had to be held to 9 feet, a foot less than the width of the C-141 cars, to allow for turn clearance of the longer car.

Deep wells, 32 inches in depth, are located in the car floors to make room for the large components.

Each car has a removable hood so that the stabilizers may be loaded and unloaded by crane.

Steel decking replaces the normal wood flooring to allow a permanent weld between the assembly support structure and the cars.

Each is equipped with hydraulic cushioning devices operating independently in each end of the car to convert the shock of impact, coupling, and train action into a controlled double-acting directional movement without recoil.

One car carries the horizontal stabilizer, forward bullet, elevator assemblies, horizontal stabilizer leading edges and tip assemblies. Leading edges and tip assemblies are stored in the hood on a shelf over the elevator assemblies.

The other car holds the vertical stabilizer, aft bullet, upper and lower rudder, and vertical stabilizer leading edges.

The steel interface plate, main restraint for the vertical stabilizer, was built by Convair tooling and served a dual purpose. In addition to its primary use as a shipping plate, it was used in the mating of the stabilizers during the fit and function check before shipment.

Handling dollies which are used to transport the stabilizers were designed and built by Convair plant engineering.

Con-Trib Sets Fair Share Goal

(Continued from Page 1)

ways.

A major portion of Con-Trib funds goes to United Community Services and similar consolidated-giving organizations. Disbursements also are made to dozens of other charitable organizations not represented in UCS but which the Con-Trib-Club committee has investigated and considers worthy of aid.

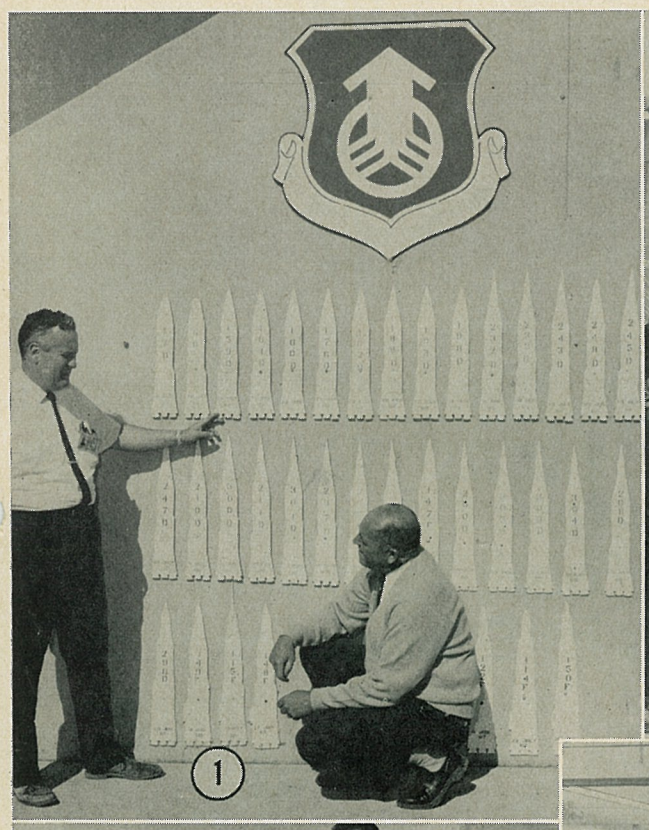
Ten per cent of the club's income goes into its Emergency Aid Fund to assist employes and their families in unexpected catastrophic situations that have wiped out family savings.

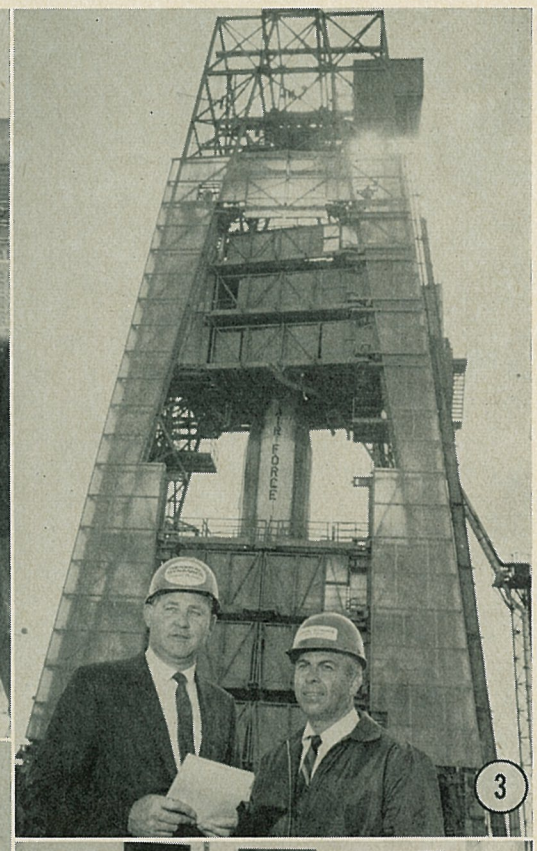
Most of these hardship cases are the result of major or prolonged illness, accidents, disability or death. Each request is investigated by two or more members of the Con-Trib committee.

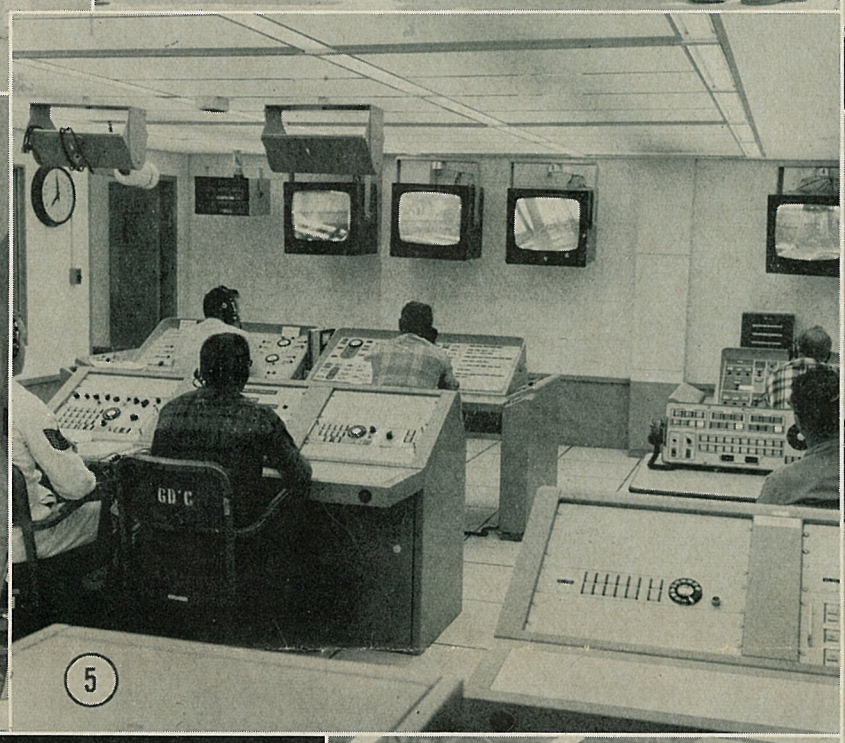
Each employe can determine his Fair Share from the following table, based on hourly or monthly salary rate:

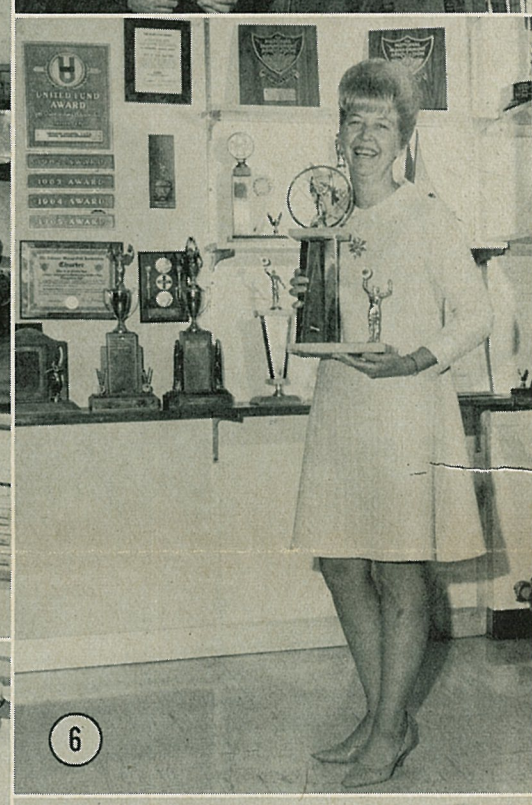
Hourly Employes (weekly)		Salaried Employes (bi-weekly)	
Hourly Rate:	Fair Share:	Monthly Rate:	Fair Share:
$2.00	$ .64	$ 400	$1.48
2.35	.75	500	1.84
2.60	.83	600	2.22
2.85	.91	700	2.59
3.10	.99	800	2.96
3.35	1.07	900	3.33
3.60	1.15	1,000	3.70
3.90	1.25	1,100	4.06
4.25	1.36	1,200	4.43

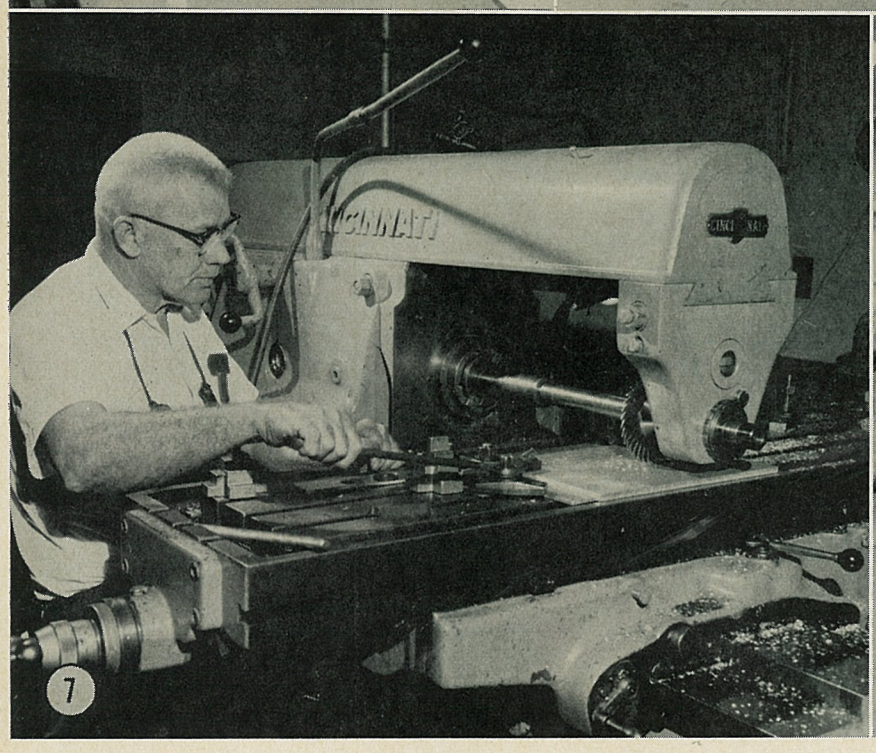
A Visit to Convair at Vandenberg AFB . . .

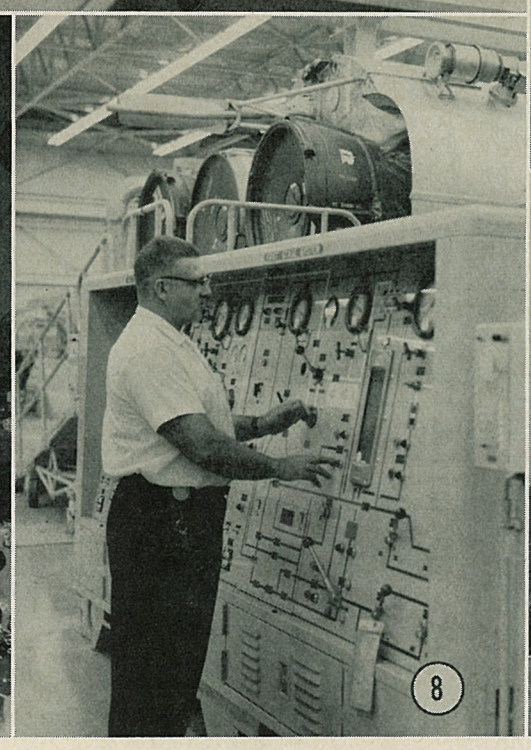


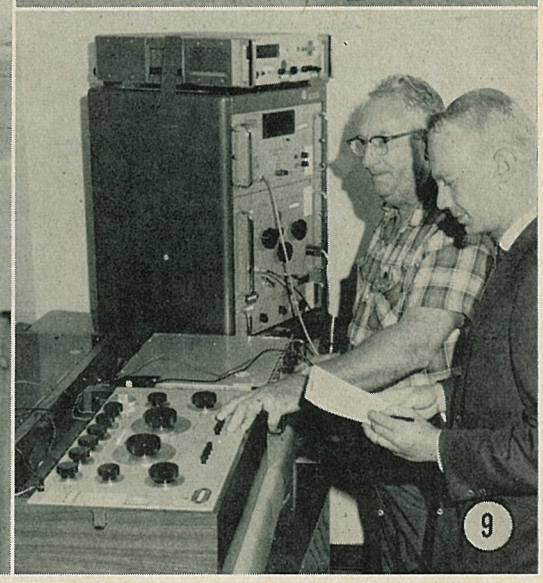












No. 1—At Vandenberg AFB, Calif., where Convair division has maintained a "colony" since 1958, Robert E. Burns, left, and L. M. "Chuck" Barnes, both Dept. 985-1 assistant foremen and "blockhouse" supervisors, discuss impressive ABRES-A launch record at base. Convair and Air Force crews have launched more than 185 Atlas vehicles from base.

No. 2—Key Convair operations staff members at base include, from left: Donald Fagan, base operations manager; R. J. "Jack" Cairns Jr., contracts; Ernest A. Millar, operations support chief; Curtis A. Johnston, launch operations chief; Marvin Tooley, industrial relations chief; Howard Pearson, design group engineer; W. P. Zoellner, ballistic re-entry systems program integration rep; Frank B. McQueary, financial control chief; Val D. Wynn, reliability control chief; James Copeland, ABRES-B site manager.

No. 3—Plans for upcoming launch are reviewed by A. H. "Arnie" Hoines, left, ABRES-A site manager, and Blaine Schultz, site foreman. Vehicle in gantry is Atlas F.

No. 4—Operating key punch and verifier machines in electronics data processing section, from left: Sandy Archibald, Katy Renollet, Ann Cordial, Barbara Chatwin. Gerry Nuff, analyst, looks on.

No. 5—Convair and AF personnel man launch control consoles in blockhouse, watch various views of launch pad via TV.

No. 6—Many trophies earned by Convair folk at Vandenberg for safety, community service, etc., are displayed in Missile Assembly Bldg. 5 lobby. Pat Malone holds major safety award.

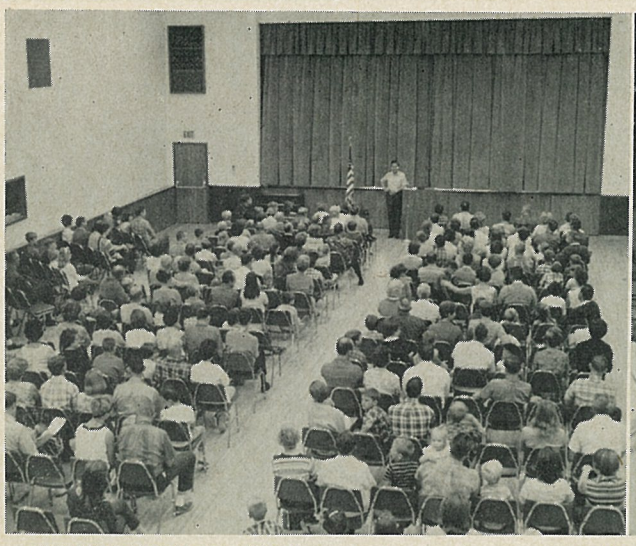
No. 7—Using milling machine to cut slots in aluminum at fabrication and maintenance shop is William Barton, instrumentation machinist.

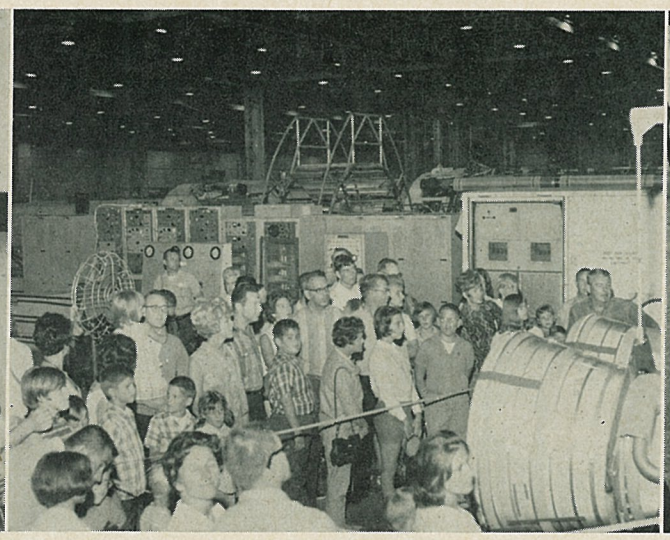
No. 8—Hydraulic pumping unit used in systems checkout is operated by Robert C. Ihrig, launch service mechanic.

No. 9—Alternating current, thermal transfer voltmeter and direct current potentiometer is used by J. R. Stevens, senior calibration technician, in calibration lab. B. P. Perrine, lab engineer, notes results.

★ ★ ★

(Photos by Thomas Hansen, 1369th USAF Photo Squadron; photo coordination by Sid Griffin, Dept. 985-1.)





"CUSTOMER" FAMILIES—Air Force Space and Missile Systems Organization officers and members of their families visited Convair's Kearny Mesa plant Sept. 23 for briefing, plant tour and picnic lunch in CRA Missile Park. From left, visitors are shown being welcomed by Grant Hansen, vice president-launch vehicle programs; looking over Centaur in factory; lining up for food catered by Prophet Co. Youngsters rode merry-go-round and model train.

SAMSO Officers and Families Tour Convair, Picnic in Park

More than 200 Air Force Space and Missile Systems Organization (SAMSO) officers and family members were guests of Convair division Sept. 23 for a tour of the Kearny Mesa plant and a family picnic at CRA Missile Park.

Grant Hansen, Convair vice president-launch vehicle programs, welcomed the group and gave an informal presentation on some of the division's activities. John P. McCann, MD, chief of the aerospace medicine group of Convair's life sciences Dept. 592-0, described equipment and facilities used in life sciences studies.

Col. Leo W. Sullivan, SAMSO deputy for launch vehicles and director of program office for Atlas and Athena launch vehicles, also spoke briefly and expressed appreciation for Convair's serving as host.

The group saw use of a water-pressurized space suit in a neutral-buoyancy demonstration in Convair's new underwater test facility, simulated aircraft carrier landings in the integrated manned space systems simulator area, and Atlas and Centaur vehicles in work in the factory.

Launch vehicle programs and Defense Contract Administration Services representatives accompanied the group.

Lunch at Missile Park was catered by Gil Hutter, Prophet Co. cafeteria manager at Kearny Mesa, with barbecued bottom-round of beef as the entree.

The younger set—and many of their parents—enjoyed rides on the model train and merry-go-round in the park.

MAT MILESTONE—Foreman George Carroll marks mat that completes 5,000,000 square feet of airfield landing matting turned out on Convair automated line as (from left) J. C. LeBlond, Kaiser site manager; J. C. Nemec, chief of support section, Defense Contract Administration Services; and C. L. Jackson, Convair program manager, look on.

Convair Landing Mat Output Reaches Five Million Sq. Ft.

Late last month the 297,265th airfield landing mat rolled off Convair's automated production line. That mat completed production of 5,000,000 square feet of matting, equivalent to the amount of the initial order from Kaiser Aluminum Chemical Corp.

Convair has been turning out aluminum honeycomb core mats for the U.S. Army under a subcontract from Kaiser since early last year. A follow-on contract received this summer will extend production into 1968.

All of the present output of mats are being shipped to Viet Nam where they are being laid as combat zone landing fields for Air Force planes.

Convair's automated line is running smoothly and turning out quantities of mats in excess of contractual requirements, according to C. L. Jackson, Convair program manager.

Production now is on a round-the-clock basis, six days a week, with a third shift added last month. There now are about 120 production workers on the mat line, 40 to a shift.

Plans for modifications which will keep the line in constant operation with the minimum of maintenance down-time are well under way, Jackson said. Tool engineering has completed and released drawings to tool manufacturing and installation of major equipment is expected in December.

Installations will include a standby cover welder; parallel systems at the pan weld and mat assembly stations; dual systems at the potting station and paint spray booth so that one system may be shut down for maintenance and cleaning without interrupting production. Speeds of the conveyor also will be increased to step up production rate.

HUNTER BAGS 135-LB. BUCK

Harry M. Black, Convair jig and fixtures builder, bagged a 135-pound mule deer Sept. 23 near Julian, one of the largest taken in the area this season.

Squalus Survivor Recalls Escape Of 28 Years Ago

Memories of 28 years ago were revived recently for Judson Bland, Convair industrial engineer at San Diego, with the account of the sinking of the USS Squalus in the Sept. 23 issue of the Saturday Evening Post.

Bland was one of the 33 rescued from the submerged vessel which accidentally sank during a test dive off the North Hampshire coast on May 23, 1939. An electrician mate 1/c at the time, Bland was one of four who barely escaped the flooded after battery room before the emergency hatch was swung into place. Twenty-six men lost their lives.

After 34 hours on the ocean's bottom, 247 feet below the surface, the survivors were brought up in the first actual use of the rescue bell developed by Steve Momsen. **(GD/NEWS, May 13, 1959.)**

Bland was assigned to help with salvage operations of the Squalus and went on to serve several more years in submarines during his Naval service. In all, he spent 12 out of his 21 years of service in submarines, and made four war patrols on the USS Gar during World War II. He retired from the Navy as a lieutenant in 1947 and has been with Convair since 1955.

Training Seminar Sponsored by ASQC

Several from Convair took part in an American Society for Quality Control (ASQC) management training seminar last week (Sept. 30) in Los Angeles.

L. I. Medlock, director of reliability control, spoke. H. H. Mishler, past chairman of the San Diego ASQC section, conducted a session on section leadership.

Other officers of the San Diego section attending included C. L. Amaral, P. J. Asprion, Sam Petcher and P. E. Gelles of Convair and J. Z. Mraz of the DCAS plant representative's office at Kearny Mesa.

Three Convair Supervisors Earn Honors For $2 Million Cost Cut

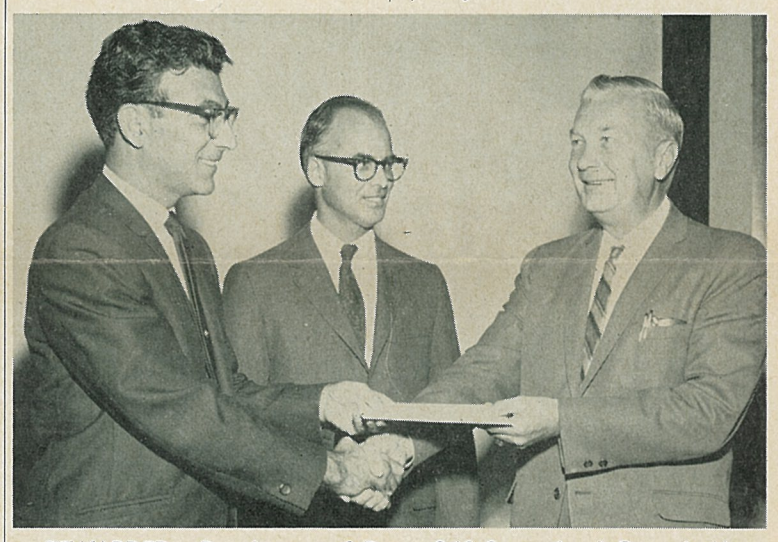
Cost reduction projects earned honors for three Convair supervisors at the September Convair Management Club meeting.

R. H. Lange, Dept. 840-3, is credited with $1,694,144 for his CRP which resulted in conversion of scrap aluminum. He was chosen as the club's May honoree.

E. D. Robinson of Dept. 045 was April award winner for suggesting reduction of low pressure bonding at Lindbergh Field plant. Pressure requirement for bonded assemblies was reduced so that lower cost gas ovens may be used instead of the high cost autoclave. The change resulted in a saving of $78,534.

June's cost reduction award winner was C. H. Huss, Dept. 833. Huss proved by a value analysis that several units of obsolete test check-out equipment could be modified and used to support the ARM F4D and A6A aircraft as well as VSX and AX programs. Use of the equipment saves $167,854.

Boosters of the Month honors were to Harold L. Jensen Jr., Dept. 988-2, for April; Manuel Gonzales, Dept. 840-0, May; Frank Munson, Dept. 831-0, June; and James McSparron, Dept. 059-3, July.



REWARDED—Ray Lange of Dept. 840-3 received Convair Management Club award for large cost reduction savings from Ad Mosco, club president. In center is John Tannone.

New Roll-Out Stocking Facility Will Save Floor Space at LF

A roll-out skin stocking facility for C-5 rudders and elevators will save hundreds of feet of floor space in the metalbond area of Convair's Lindbergh Field plant.

The compact rack with roll-out frames was designed by plant engineering's facilities engineering section when it was obvious that the large C-5 skins would take up more space than there was to spare in the Bldg. 3 area.

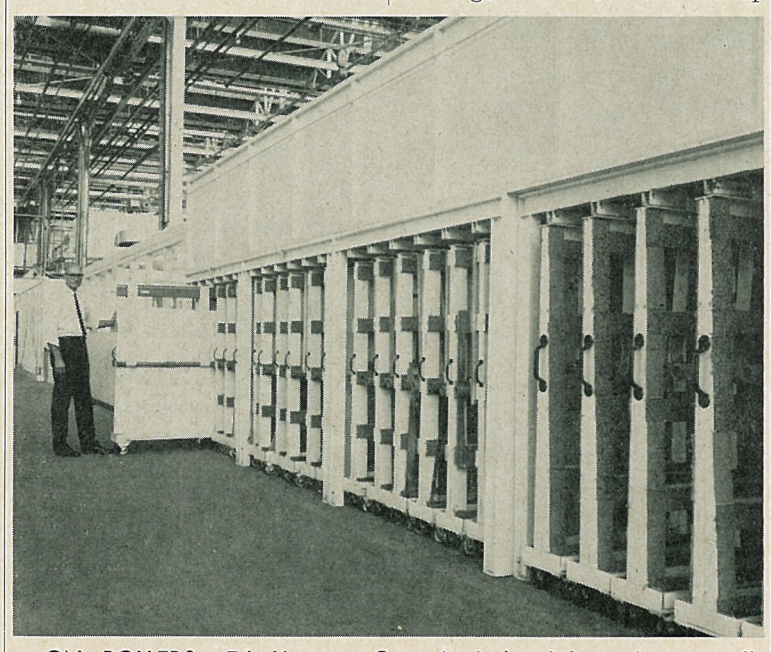
The rack, 9x31-ft., contains 24 A-frames, each capable of holding a 5x8-ft. skin. The former type of A-frames took up about 4 feet in width besides the aisle space around them.

Thus, 1,450 square feet of floor space—just about the amount of space in an average home—has been saved, W. J. Stanley, manager of plant engineering, said.

As an added bonus, an open office area has been built on top of the reinforced rack!

The new frames may be easily pulled out from the rack whenever needed and are kept cleaner and safer within the protected and covered area, Stanley pointed out.

The same roll-out principle was used for storage of Atlas wave guides under the Atlas dock in the Bldg. 5 production building at Kearny Mesa. However, in that case the shelves were horizontal while the skin frames are upright.



ON ROLLERS—Ed Huston, Convair industrial engineer, pulls A-frame holding C-5 skins out of rack constructed to conserve space for storage of skins in Convair's metalbond department at Lindbergh Field.

Salvage Schedule

Next sales day for GD employes at Convair salvage yard, Lindbergh Field plant, adjacent to Gate 5, will be Saturday, Oct. 14. Hours are 8 a.m. until noon.

No Frontiers

CRA Hams 'International,' Talk Worldwide Via Radio

CRA Radio Club's 25 members talk with other "hams" around the world from the club's amateur radio station, W6UUS, in the CRA Clubhouse at Kearny Mesa.

A display board in the club's "ham shack" is filled with QSL verification cards from amateur operators across the United States and in New Zealand, England, Korea, Russia, Chile, Uruguay, Australia, Antarctica, Labrador, Canada, Japan, Okinawa, Guam, Christmas Island, Midway Island and from several ships at sea.

The club actually has three separate transmitter and receiver installations, all using the club's W6UUS call letters and all equipped for both code and voice transmission.

The general-class installation or "main station" is equipped with a 1,000-watt Collins transmitter, for use on all high-frequency bands, and a Collins 75A-4 receiver. It also has phone-patch equipment and several calls from servicemen overseas have been relayed to their families in California through the club.

A technician-class installation uses a Seneca transmitter for 150-watt transmissions on 6 and 2-meter bands and has a Clegg 99 receiver.

The novice-class installation has a 75-watt Eico transmitter for novice frequency transmissions and a Collins 75A-3 receiver.

Fred Schulz, commissioner, said the club's equipment is among the best available. General class licensed amateurs operate all the equipment while novice class hams are restricted to code transmissions on the novice frequencies.

Officers of the club are Norm Tipton, president; Joe Miller, vice president; Dale Taber, secretary, and Bill Roden, station engineer.

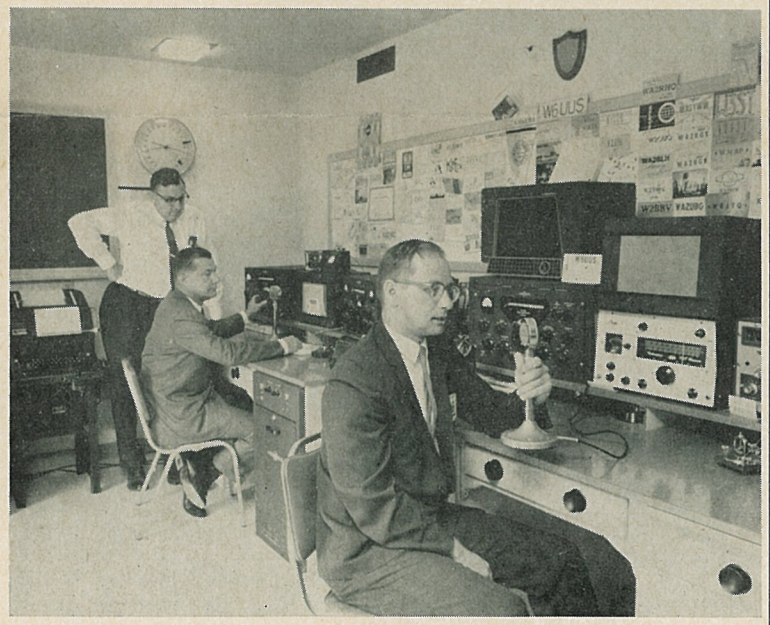
Any employe who is an amateur operator or is working toward his amateur license is invited to join the club, which has regular monthly meetings and field trips or transmitter hunts.

W6UUS is used primarily evenings and weekends and most of the club's members also operate fixed or mobile "stations" from their homes or autos. Several meet "on the air" in code at 7140 kilocycles about 7:30 p.m. Wednesdays for a "round table" to help maintain proficiency in code sending and receiving.

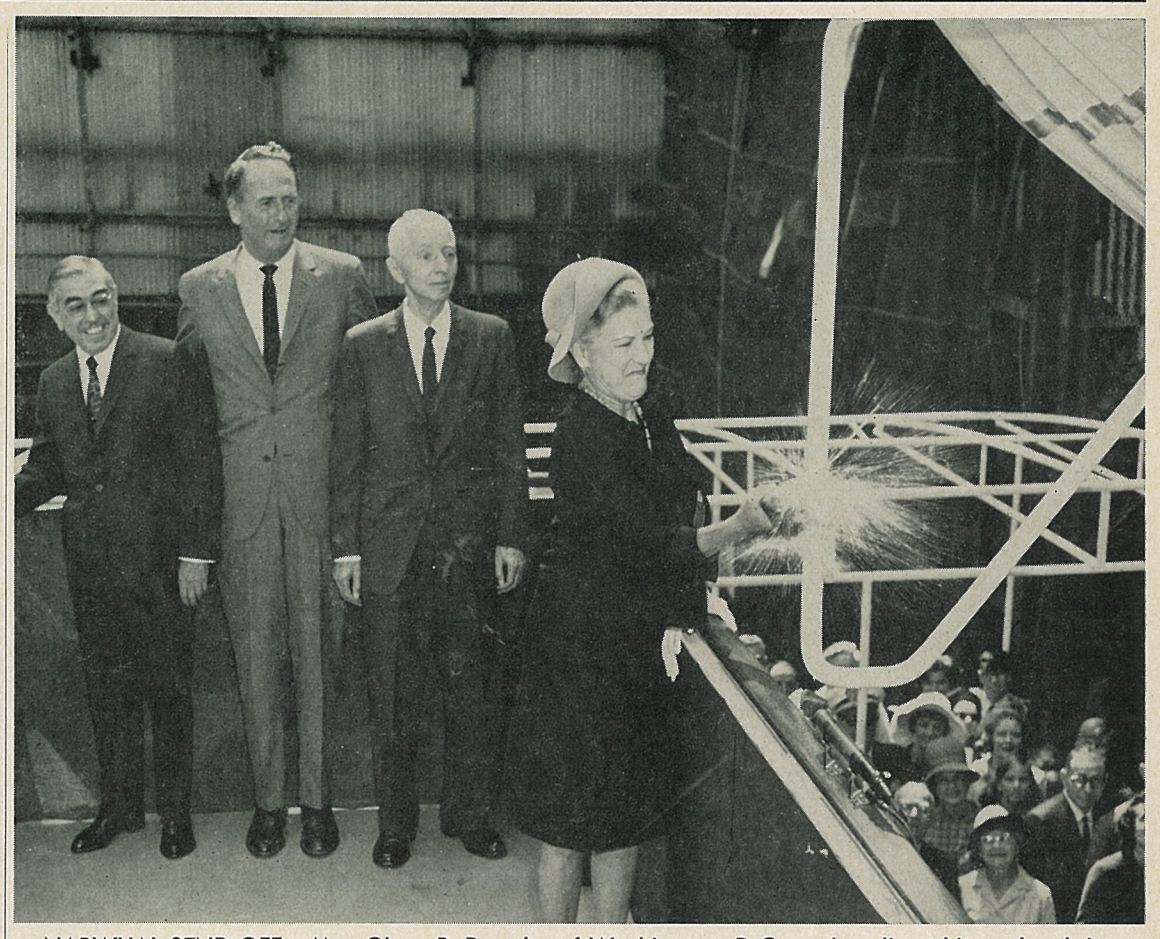
The club's transmitters are equipped with both standard and "automatic" code keys. The "automatic" keys provide electronic sending speed control at from 8 to 60 words per minute.

In case of power failure in an emergency, the W6UUS equipment could be "on the air" within 15 minutes, using a Company-owned generator for power. Members of the club participate in annual American Radio Relay League Field Days that stimulate operation under emergency conditions.

Radio teletype transmissions received in the club's "shack" can be printed on a teletype receiver. Several members of the club also are experimenting with television picture transmission on amateur frequencies.



RADIO ROOM—CRA Radio Club's station W6UUS at Kearny Mesa has some of finest equipment available and is used by members to talk with other amateur operators around the world. From left are Alex Halyburton, program chairman; Fred Schulz, commissioner, and Norman Tipton, president.



NARWHAL SEND-OFF—Mrs. Glynn R. Donaho of Washington, D.C., makes direct hit as she christens nuclear attack submarine Narwhal in Sept. 9 ceremonies at Electric Boat division, Groton, Conn. Watching, from left, are Senator John O. Pastore of Rhode Island, main speaker at launching; Roger Lewis, General Dynamics president; and VAdm. H. G. Rickover.

Mgmt. Club to Hear Undersea Technology

"Deep Submergence and Sea Power," is title of the program for Convair Management Club members at the Oct. 18 meeting in Balboa Park Club.

Undersea technology, man in the sea, and the coming Sealab III tests next spring will be covered by a speaker from the U.S. Navy Sea Project Office.

A Convair film on anti-submarine warfare will precede the talk.

Social hour starts at 5:30; dinner at 6:30. A short business meeting will be held at 7:30.

Tickets are now on sale by Boosters at all plant locations.

Trio Attending Swiss Meeting

Three Convair men are in Switzerland as delegates to the 14th General Assembly of the International Union of Geodesy and Geophysics, Sept. 25-Oct. 7.

J. W. Petrie, chief requirements engineer-Navy and Marine systems, and Robert Devereux, program manager for ocean data systems, are attending the International Association of Physical Oceanography in Berne. Dr. Michael Griggs, staff scientist in space sciences, is representing the division at the International Association of Meteorology and Atmospheric Physics in Lucerne.

The seven constituent associations of the IUGG have a total of some 3,000 scientists in attendance. Since no one city in Switzerland was able to accommodate the entire General Assembly, meetings are being held in Zurich, Berne, Lucerne, and St. Gall.

Attention Called to Hazards During Fire Prevention Week

Convair division is joining other companies throughout the country to draw attention to National Fire Prevention Week, Oct. 8-14.

Fire Chief D. D. Dimmitt points up the fact that fire prevention is a year-round goal, and went on to say that low fire incidence within the division over the last year proves that Convair people are on guard at all times.

No special demonstrations are planned this year, as in the past, but firemen at both Kearny Mesa and Lindbergh Field plants will show anyone how to operate fire extinguishers and answer questions pertaining to fire safety at any time.

Phone extensions are: Kearny Mesa, 1811; Lindbergh Field, 510; AF Plant 19, 525.

Stan Sharp, manager of industrial security, urges all Convair departments to make a special effort to eliminate fire hazards and to keep the thought of fire safety uppermost in the minds of employes constantly.

Research Sub Pilot to Talk

Louis M. Fead, research submersible lease manager and pilot for General Dynamics' Marine Technology Center in San Diego, will speak Monday (Oct. 9) at a meeting of the San Diego section of the American Society for Quality Control (ASQC) in the Bronze Room, La Mesa.

Models of GD's Star II and Star III will be on display and color films will be shown.

L. I. Medlock, director of reliability control for Convair, will moderate.

Non-members are invited. Tickets are available from P. J. Asprion, ext. 2363 KM; G. A. Gibbons, ext. 663 LF; R. C. Mansell, Electronics-SD, ext. 1616; A. J. Matt, General Atomic, ext. 521; and R. E. Lowe of DCAS plant representative's office, ext. 1327 KM.

Travelers Enplane For Europe Tour

Twenty-seven General Dynamics travelers enplaned last Saturday, Sept. 30, for a three-week trip to Europe.

The 22-day trip, under CRA auspices, will take tourists either by bus or air through Denmark, Germany, Switzerland, Austria, Italy, France, England, and Spain.

In another CRA-sponsored trip, a busload of 38 went to Las Vegas for the weekend (Sept. 29-Oct. 1). Their headquarters there was at the Aladdin Hotel on the "strip."

Maintenance Unit Set Up for Plant 19

A maintenance dispatch function has been established for AF Plant 19 in Bldg. 27 for all service and repairs, effective this week.

It is reached by calling LF ext. 2050.

Other Convair maintenance service and repair locations are in Bldg. 5 at Kearny Mesa plant, ext. 1130; and in Bldg. 7 at Lindbergh Field, ext. 575.

Series of Hawaiian Tours Under Way

CRA has arranged for inclusion of General Dynamics employes and families in a series of Hawaiian tours. Groups leave Los Angeles International Airport every other Saturday.

Available are eight day, four island tours at $268, 15 day, four island tours at $298 and 15 day five island tours at $368. Prices include air transportation, hotel accommodations, sightseeing and special events, baggage handling, airport and hotel transfers, Hawaiian escorts and gratuities.

Brochures and application forms are available at all employe services outlets. Call the CRA clubhouse, extension 1111 KM, for additional information.

F-111 Briefings Draw Favorable Reactions

A special F-111 briefing for Vice President Hubert M. Humphrey and Air Force Secretary Harold Brown was an opening day highlight of the Air Force Association's fall meeting (Sept. 11-13) in Washington, D.C.

Vice President Humphrey displayed great interest in the review of the F-111 program and the General Dynamics exhibit. He asked a number of questions and was reluctant to leave the exhibit, much to the dismay of his staff members who were trying to maintain a tight schedule.

Norman Stranberg of the Dayton Office of General Dynamics conducted the Vice President's briefing, which included motion picture footage of F-111 flight test developments.

During the three-day meeting, some 55 briefings on the F-111 were conducted by GD men including Grover C. Tate Jr., of the Company's flight test department at Edwards Air Force Base, Calif.

More than 1,000 military, government and industry officials attended the briefings. Hundreds more toured the exhibit area to inspect an F-111 wing on static display.

Convair Men Elected To Head AIAA Section

Robert Williams, Convair manager of systems engineering, has been re-elected chairman of the San Diego Section of the American Institute of Aeronautics and Astronautics.

Dave Jones, Convair program manager in advanced design, was elected vice chairman for the coming club term.

Among committeemen appointed by Williams are, from Convair: Warren Hardy, Helen Navoy, Dale Sutliff, Jim Robinson, Dr. Matt Nilson, John Wild, C. L. Hyde, Wally Seaforth, Earl Godenschwager, Tom Leech; and from General Atomic, Anthony Navoy and Dr. M. Stearn.

Abels and McAleer Transfer to Pomona

J. C. Abels and T. F. McAleer, both veteran Convair men, have transferred to Pomona division.

Abels is a project administrator in the Redeye program and McAleer is in a staff capacity to the production control manager. For Convair, Abels has been chief of program planning and control, Centaur master schedule supervisor, chief of support services for Atlas weapons systems and long range planning project administrator.

McAleer has been material project administrator in Convair production control since 1963.

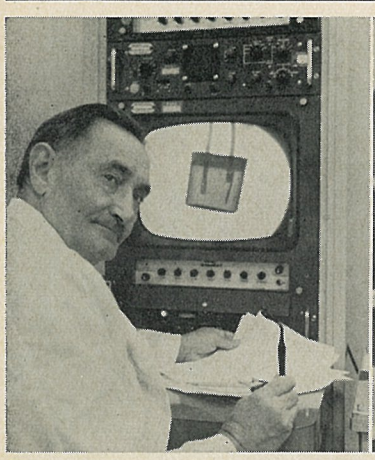
Horsemen, Families Join in Hayride

Convair horsemen and their families will join in a hayride Sunday, Oct. 14, from the Black Mountain Stables.

Riders will mount their own horses or can rent them from the stables to escort the wagon on the nearly two-hour ride over country roads. The ride will start at 7 p.m. and end back at the ranch for doughnuts, coffee, and hot chocolate.

The stables can be reached by going north on Hwy. 395, taking the Mira Mesa turnoff to the right. Maps will be sent club members.

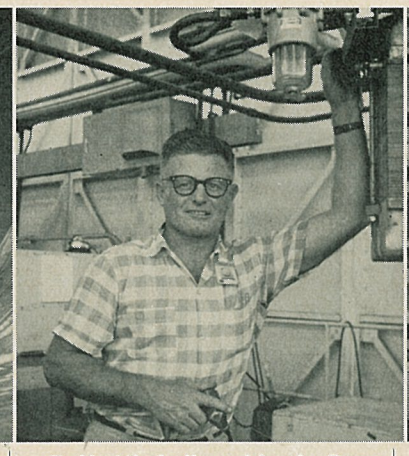
Reservations must be made by Oct. 12 by calling Barbara Doom, chairman, 279-6090, or Marlene Stewart, 488-2121.



Don Gonzalez, a Dept. 144-2 quality control analyst, checks diode with X-ray TV inspection system in receiving electronics test lab in Bldg. 5 at Kearny Mesa. The diode, about the size of a pea, is magnified 27 times on TV screen as 150,000-volt X-rays penetrate stainless steel case to show internal leads and semiconductor chip. Gonzalez, a 15-year employe, enjoys dove hunting in the Imperial Valley, and brought in three sailfish, including a 90 pounder, on a recent fishing trip to Mazatlan, Mexico.

The spares estimating group at Lindbergh Field likes to see Sylvia Akers coming — she's usually bringing in a fresh batch of her home-baked cookies or cakes, for which she's famous. A parts lister, Sylvia has kept her Convair co-workers supplied with goodies since she joined service parts blueprint files and documentation in late 1955. She first joined Convair in 1951 and spent a couple of years installing harnesses in Convair 240s and 340s. Before that she had been in the plating department at Langley Corp.

C. B. Adams, die finisher in tool and die at Lindbergh Field, is pictured grinding an F-111 bonding tool. He started with Convair as a molder almost 14 years ago. In 1960 he transferred to Astro tooling and worked at Plant 19 and Kearny Mesa plants until a couple of months ago when he was moved back to LF. Before coming to San Diego in 1954, Adams installed gas appliances for a natural gas company in New York. He and wife, Ruby, live near College Grove. They have three sons.



E. H. Mitchell, welder in Dept. 758 at AF Plant 19, is presently assigned to resistant welding of re-entry vehicles. He joined Convair in 1955 as a welder and started on the first Atlas missile when it was being fabricated in Lindbergh Field's Bldg. 4. He went to the Astronautics plant with the first contingents in 1957 and rose to leadman and then to assistant foreman. He was at Abilene, Kan., for a year during installation of the Atlas missile base there. He and his wife, Frances, live in La Mesa. Mitchell likes to hunt and fish.

Virginia Barber, a stock clerk in material services Dept. 840-2's stockroom in Bldg. 4 at Kearny Mesa, provides a wide range of office supplies, stationery and forms for purchasing, receiving and material departments. A native San Diegan, she attended San Diego High School and has been a Convair stock clerk 14 years. Before coming to Kearny Mesa in 1958, she worked in a factory stockroom at Lindbergh Field, handling parts for 240 and 340 Convair Liners. She lives in East San Diego with her husband, Don.

Systems Mgmt. and Engineering Lectures Scheduled by AIAA

A ten-week lecture series dealing with Systems Management and Systems Engineering will be given this fall through sponsorship of the local section of AIAA.

Guest lecturers, all specialists in their fields, will present insight into trends of customer management requirements and their impact on the future of government and industrial management systems. One of the course highlights is an interdisciplinary analysis from the systems, procurement, and fiscal viewpoints.

Classes will be in the Life Sciences Bldg. at San Diego State from Oct. 16 through Dec. 18. The Systems Engineering lecture will be from 7 to 7:45 p.m. followed by the Systems Management lecture from 7:45 to 9:15.

First Systems Management lecture will be on DOD System Management by George Mellinger, assistant to the president, North American Aviation.

Others will cover such subjects as: Management Reporting Systems; Information, Administration, Automation; Contemporary Trends in DOD Management, Total Package Procurement, Contemporary Trends in Government Contracts, C-5A Systems Engineering, Contemporary Trends in Systems Engineering, Contemporary Trends in Configuration Management.

Robert Williams of Convair, and section chairman, will conduct the Systems Engineering series. Williams, manager of systems engineering at Convair, attended the DOD System Program course at the AF Institute of Technology.

Registration fee for the entire series is $6 for AIAA members and $16 for non-members. Books and other material will be furnished by AIAA. Non-members may obtain applications from Maridee at ext. 1122 KM.

MGT. DEVELOPMENT COURSES SLATED

Seventeen management and professional development courses in nine subject fields are being presented by Convair Management Club beginning this week at Kearny Mesa and Lindbergh Field.

Five are on "Principles of Managing" with one of non-technical orientation, two for technical and professional personnel and two primarily audio-visual.

Other subjects are "Challenges for Management," "Marketing and Salesmanship," "Effective Writing," "Effective Communication," "Modern Memory Methods," "New Wave in Management Mathematics," "Computers: A Management Tool" and "Symtems Engineering Principles."

Several are open to non-members. Call the Management Club office, ext. 3146 KM. for details.

Students Complete Toastmaster Class

Twenty junior high age children of Convair employes recently were awarded gavels and Toastmasters International certificates on successful completion of an eight-week youth leadership program sponsored by Dynamic Toastmasters Club 457 in cooperation with CRA.

They were Dave and James Baird; Kent Conshafter; Pete Edwards; Richard Elms; Candy Hallman; Ian Johnson; John Peterson; Kathy, Ken and Laura Pond; John Prim; Bill Roush; Greg Reynolds; Brian Ruark; John Schaffer; Tim Tyler; Gene and Jeff West, and Tom Zombek.

Ezra Johnson of Dept. 420-1, Toastmasters' commissioner, coordinated the program. Ray Sodomka, Dept. 420-3, and Cy Campbell, Dept. 958-7, assisted.

Convair Announces New Safety Hours

New safety crib hours at Kearny Mesa, Lindbergh Field, and Air Force Plant 19 have been announced by Jack Garrison, Convair chief safety engineer.

They are:

Kearny Mesa—8:30 to 11:45 a.m. and 3 to 5 p.m. Mondays, Tuesdays and Thursdays; 12:30 to 5 p.m. Wednesdays and Fridays.

Lindbergh Field—8:30 to 11:45 a.m. and 2:30 to 5:15 p.m. Mondays, Wednesdays and Fridays; 8:30 to 11:45 a.m. and 12:30 to 3 p.m. Tuesdays and Thursdays.

AF Plant 19—8:30 to 11:45 a.m. and 3 to 5 p.m. Mondays, Tuesdays and Thursdays; 12:30 to 5 p.m. Wednesdays and Fridays.

Phone safety offices, ext. 765 KM or 464 LF, in emergencies.

Anything Missing? Try Lost-Found

Have you lost anything lately?

How about checking with lost and found sections. Many articles, including prescription glasses, keys of all descriptions, are unclaimed at both Convair lost and found counters. Kearny Mesa's depository is in employe services, Bldg. 8; Lindbergh Field's at the employe services counter in Bldg. 16.

Fishing Club Plans Salton Sea Outing

CRA Fishing Club has scheduled a special Salton Sea derby for Oct. 14 and 15 at Red Hill Marina. Several members plan to combine their fishing with duck hunting, since the hunting season opens Oct. 14.

The first day's catch and kill will go into the skillet or over charcoals for a fried fish and roast duck potluck dinner at 4 p.m. Saturday.

Fish caught either day can be entered in the contest for derby prizes.

Prizes will be awarded at the club's Oct. 17 meeting in the Gillespie Field Clubhouse. Potluck dinner will be at 6:30 p.m. with the meeting at 7:30.

Winners of the August monthly derby were Lowell Ellis, 29-lb. albacore, first; A. E. Clauss, 25-lb. 4-oz. albacore, second; and C. M. Ray, 10-lb., 10-oz. corvina, third. Bill DeLaFont Sr. won the Torrey Pines special.

Sports Car Drivers Place in 'Olympics'

Marv Jensen and Jack Gallant, CRA Sports Car members, placed fifth and sixth overall in last month's state-wide Sports Car Olympics at Squaw Valley and, with their wives, took part in seven events. Some 400 from all parts of California competed in the Sept. 2-4 Olympics.

Jensen and Gallant took first in the Blind Man's Mini Maze and individual firsts in the Autocross II on Sept. 4; second in the preceding day's T&D Rally and third in the Fun-khana. Jensen took a second, Helen Gallant, also a second, and Gallant a third in the Autocross individual events the same day. Mrs. Gallant and Nancy Jensen teamed to take first in women's class in the Fun-khana, and Mrs. Gallant also took a third in the Sept. 4 Autocross II.

Women Golfers Team With S-C Men's Club

Don Waldron and Vi Hirst took first place in a mixed doubles links tournament Sunday, Sept. 17, when the GD Women's Golf Club joined the Stromberg-Carlson Men's Golf Club at Whispering Palms course in Rancho Santa Fe.

Charles and Ann Plummer were runners-up. Russ Shepley and Joanne Dunbar had the dubious honor of taking home last-place trophies.

Vi Hirst and JoAnn Kranz shot low net for women and Fred Nuzzo, George Elmore, and Jack Waldron won low net prizes for the men.

Bleachers Filled For CRA Club's All-Day Horse Show on Sept. 24

The bleachers were full at the CRA Riding Club horse show Sept. 24 as spectators watched gymkhana and equitation contests at one of the largest shows the group has staged in the CRA ring.

There were 248 entries with 125 individual riders taking part.

Lana Lagerstrom won the silver goblet given in the gymkhana drawing and John Jacobsen won the goblet in the drawing following the afternoon equitation program.

Rosan De Leonardo (whose mother is in Dept. 780) was winner of the pony given in the raffle. Sylvia Kennelly drew the radio.

Clyde Donahoo and Judy Watson were show managers. Gymkhana timers were Mrs. Watson, Shirley Berry, Bud Donahoo, and Floyd Branscom who also was in charge of the ring crew.

Conrad Nash was ringmaster for equitation. Judge was Ward Keyes of Bonita.

Sam Special and Barbara Branscom were ticket salesmen.

Golf Tournament Winners Listed

Following is a listing of winners in the CRA Golf tournament at Whispering Palms on August 19 and 20, with individual scores in parentheses:

0-14 handicap — Russ Davis (77), first low gross; Jerry Swarts (78), second low gross; Bill Whitley (66), first low net, and Dick Marlow (67), second low net.

15-17 handicap — R. E. Evans (82), first low gross; J. B. Simpson (85), second low gross; Clinch Crocker (66), first low net, and H. T. Fischer (69), second low net.

18-and-over handicap — Joe Hooker (89), first low gross; Bud Buffatt (90), and John Jordan (90), tie for second low gross; H. Allison (67), first low net, and J. B. Beamer (71), second low net.

Juniors, Coaches Compete in Shoot

Two members of Convair's Junior Rifleers, Phil Glick and Dave Farrelly Jr., and coaches Richard Ellis and Dave Farrelly Sr., fired in individual and two-man team events in the California small-bore championship in South El Monte, Sept. 23.

Farrelly Jr. fired 397 in the Dewar match to bring home a second place sharpshooter medal and Ellis fired 399 for a second place expert medal. Farrelly Jr. also took two fourth places and Ellis and Farrelly Sr. fifth places in various events.

The two-man Convair teams placed 12th and 13th among about 50 teams competing.

Rockhounds to See Demonstration Oct. 11

A demonstration of metal molding for gem settings will be given at the Oct. 11 potluck of CRA Rockhounds, 6:30 p.m. in the CRA Clubhouse.

R. C. Reed of Metcroft, Inc. will explain the inexpensive and easy method of making settings of an alloy much like sterling silver in appearance, but a fraction of its cost.

Also, members will see the variety of rocks and minerals they can look for on the Oct. 21-22 field trip to Rainbow Ridge.

Wives Will Lunch At Harbor House

Convair Wives will hold their monthly luncheon at the Harbor House, foot of Pacific Hwy. near the ferry landing, on Wednesday, Oct. 18.

Social hour will start at 11 a.m. with a noon luncheon following. Mrs. Carmen Spurgeon of Poway will give a decorama demonstration.

Reservations must be made by 5 p.m., Oct. 16. Call Mrs. Daniel Chiarappa, 274-2503; Mrs. Nolan Loftin, 276-4270; or Mrs. George Thompson, 278-1942.

Regular club potluck will be at noon Oct. 25 in the CRA Clubhouse. Craft sessions will be held during the afternoon.

ACE AWARDS—Robert Jassoy, left, and James Garcia, both of DCAS plant representative's office at Convair, won silver trophies in recent hole-in-one golf tournament.

WILD GAME—Bobby pins flew when "girls played the boys" at softball at Vandenberg AFB. Top left: Pat Zoellner displays graceful form at bat. Top center: Don Fagan awaits throw in plenty of time to tag out Ann Tillis. Top right: Curt Johnston, Clara Smith and Jean Ernest use dice to make decision. Lower left and lower right: spirited argument scenes involving rulebook. Lower center: Beverly Pickett, Frank McQueary, Diane Kendall.—Sidney Griffin photos.

Winning Girls

Female of Species Deadlier Than Male in Softball Tilt

A Convair women's softball team at Vandenberg AFB outscored their male supervisors, 14-13, in a recent "challenge" game at Monte Vista Park in Lompoc.

The women's team, managed by Joy Kiler and coached by J. M. Apodoca, had tied for first place with a 6-2 record in the Lompoc Women's City League, then lost in a playoff.

Don Fagan, Convair operations manager at Vanderberg, and members of his staff reportedly "harassed" the girls into accepting a challenge for the "battle of the sexes" after the women's team had won its first five straight City League games.

The men's team, with Curt Johnston pitching, was dubbed "Fagan's Yo-Yo Association of the Central Coast." The women took to the field with a "borrowed" pitcher and reportedly received considerable assistance from Tom Mahoney and his "four man team of partial umpires."

Lou Orosz, third base ump, was chased over the outfield fence by the "Yo-Yos" after an inning that began with the women on the losing end of a 9-0 score and closed with them ahead, 10-9.

The final score has been contested and a rematch is pending.

Oct. 5 Deadline In Net Tourney

Tomorrow (Oct. 5) is deadline for entries in the fall tennis tournament to be sponsored by CRA Tennis Club and Convair Management Club for General Dynamics employes and family members.

The tournament is to be played on Mesa College and Morley Field courts with men's singles events this weekend (Oct. 7 and 8), men's doubles Oct. 14 and 15, women's singles Oct. 14 and 15 and mixed doubles Oct. 21 and 22.

Entry forms may be obtained at CRA Clubhouse or from members of the tournament committee. There is a $1 entry fee.

Tournament committee members are Cecil Norwood, Dave Gorham, Bob Hintz, Bob Herold.

SWIMMING ENDS UNTIL NEXT YEAR

Family nights for General Dynamics people have been discontinued until after the first of next year. The Mission Beach Plunge, where the swimming sessions are held, is usually closed down for repair and renovation during winter months.

Discount Offered For Aztec Games

Discount tickets to the San Diego State Aztecs' home games will be available to all General Dynamics people through CRA.

Reserved seats, regularly $3, will be $2.50. Tickets will be on sale at all employe services outlets up to the Friday before the games.

Tickets for the Oct. 7 tilt with Cal State Long Beach went on sale this Monday and will be available until Friday.

Other home games coming up are Nov. 18 with Montana State and Nov. 25 with Utah State University.

CHARGER TICKETS NOW ON SALE

Chargers tickets to the Oct. 15 game with Kansas City Chiefs are on sale now at all employe services outlets. Deadline for purchase is Oct. 13. Price of seats, all reserved, is $4.50 and $6.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Oct. 10. Call ext. 1071 LF or 3322 KM.)

★ ★ ★

ADVENTURERS—Meeting Oct. 18.

ARCHERY—Shoot Oct. 15, CRA range.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BICYCLE CLUB—25-mile Mission Bay tour Saturday, Oct. 7. Meet at 9 a.m. at Uncle Susie's Pancake House, 4230 Mission Blvd., near Grand Ave. Sunday short rides continuing from CRA Clubhouse. Leave at 2 p.m.

BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.

CAMERA CLUB—Meeting Oct. 15, 8 p.m., Photo Arts Bldg., Balboa Park.

CERAMICS—Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

CHORUS—Organization meeting Oct. 10, 8 p.m., CRA Clubhouse.

COINEERS—Meeting Oct. 18, Convair cafeteria, Lindbergh Field.

DELTA DIVERS—Lobster dive Oct. 15, Cardiff. Meeting Oct. 11, CRA Clubhouse.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING—Salton Sea derby Oct. 14-15, Red Hill Marina. Meeting Oct. 17 at Gillespie Field Clubhouse, Potluck at 6:30; business meeting at 7:30.

GARDEN CLUB—Meeting tonight, Oct. 4, 7:30 p.m., Floral Bldg., Balboa Park.

HEALTH CLUB—Open 9:30 to 10 p.m., Mondays through Fridays; 10 a.m. to 5 p.m., Saturdays. Call ext. 1111 KM for information.

HI-FI/MUSIC—Meeting Oct. 10, 7:30 p.m., CRA Clubhouse.

ICE SKATING—General Dynamics skate night Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

PISTOL CLUB—Shoot Oct. 8, 9:15 a.m., SD Police Pistol Range.

RADIO CLUB—Meeting Oct. 5, 7:30 p.m., CRA Clubhouse.

RIDING CLUB—Meeting Oct. 11, 7:30 p.m., CRA Clubhouse. Family hayride Oct. 14, 7 p.m., Black Mt. Stables. Call 279-6090 or 488-2121 by Oct. 12 for reservations.

RIFLE CLUB—Senior shoot Wednesday, Oct. 11, 7:30 p.m. Junior shoot Saturday, Oct. 7, Gillespie Field range.

ROCKHOUNDS—Oct. 11 potluck, 6:30 p.m., CRA Clubhouse. Field trip to Rainbow Ridge Oct. 21-22.

ROLLER SKATING—Free skate night Oct. 16 at Skateland, Front and G Sts. Tickets at employe services outlets.

SCULPTURE—Workshop sessions Monday, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB—Colorado River trip Oct. 7-8. Call Harry Eastman, 274-4982.

SPORTS CAR CLUB—Meeting Oct. 11, 7:30 p.m., Convair executive dining room, LF.

SQUARE DANCING—Dynamic Eights dance every Thursday evening, 8-10 p.m., CRA Clubhouse.

STAMP CLUB—Meeting Oct. 12, 7:30 p.m., CRA Clubhouse.

TENNIS—Tomorrow is last day to enter fall tennis tourney, Oct. 7-8, 14-15, 21-22. Entry forms at CRA Clubhouse.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m., Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m., both at CRA Clubhouse.

TOASTMISTRESS CLUB—Serra Mesa Club meets Oct. 17, 7 a.m., Convair executive dining room, Kearny Mesa. Call Beth Underkofler, ext. 1718 KM.

TROPICAL FISH—Meeting and workshop Oct. 9, 7:30 p.m., CRA Clubhouse.

WIVES—Luncheon Oct. 18 at Harbor House. Call reservations by Oct. 16 to Mrs. Chiarappa, 274-2503; Mrs. Loftin, 276-4270; or Mrs. Thompson, 278-1942.

WOMEN'S GOLF—Tourney Oct. 14 at Tecolote Canyon Course.

Volunteers Sought To Form Chorus

Employes and family members (16 years or older) interested in forming a General Dynamics Chorus will meet at 8 p.m., Tuesday (Oct. 10) in CRA Clubhouse.

Phone Jim Pate, ext. 3034 KM; Bob Hoover, ext. 1926 LF; or Walt Miner, ext. 1111 KM.

TRUE TALE—Earl Christian, Convair Dept. 491-0, right, shows off marlin caught by throwing rod and reel overboard. Bob Brazell is at left.

Line on One Rod Exhausted, Angler Attaches Another, Lands Marlin

Quick thinking helped Earl Christian, Convair manufacturing development engineer, bring in a 124-pound marlin after a lengthy battle off Point Loma.

Christian, using lightweight tackle, had been in control of the situation as the marlin jumped 22 times. Meanwhile, Bob Brazell, Dept. 592-0, had been doing a yeoman job skippering Christian's 16-foot CRA-built fiberglass boat and hitting an inquisitive shark over the head five times with an oar.

Then Christian's fun began! The marlin got its tail wrapped in the line and Christian saw the end of the line on his reel fast approaching.

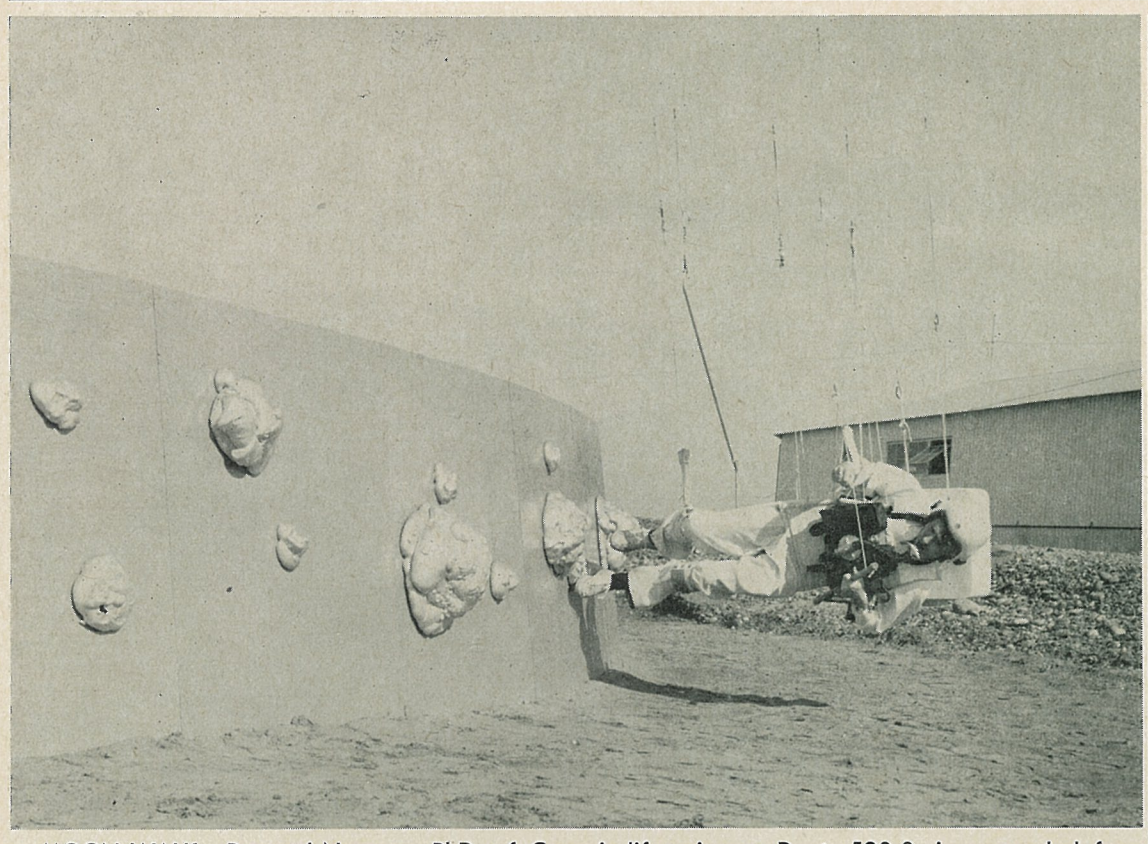
He remembered having once heard of a fisherman attaching a second line to his first, throwing the first rod and reel overboard and still bringing in his fish.

"It was either lose the marlin—or gamble," he recalled last week.

Christian hooked the line from a second rod into his first reel and saw the new lightweight outfit his wife had just given him disappear into the blue.

The marlin went down 500 yards, taking about 250 yards of line from the second reel, before he drowned and was pulled back to the surface 3 hours and 23 minutes after taking the hook.

Christian's first rod and reel, was retrieved undamaged.



MOON WALK—Bernard Newsom, PhD, of Convair life sciences Dept. 592-0, is suspended from water tower monorail trolley by cable and nylon ropes as he simulates walking and running on moon. Plastic "moon rocks" add realism.

Rather Realistic

Cable Suspended 'Moon Walkers' Test Limits of Oxygen Supply

Life scientists at Convair have been walking and running "on the moon" under simulated 1/6 earth gravity with body weight suspended by cable from a 148-foot-high water tower.

Tests may help determine how rapidly America's first Apollo astronauts will use up their oxygen supply as they explore the lunar surface.

Convair's unique "lurain simulator" enables the scientists to walk or run with only 1/6 their normal weight being exerted on a 296-foot circular plywood track around the base of the tower. The track was designed to slope 9.5 degrees or more from vertical and test subjects are suspended perpendicular to it.

A 90-foot suspension cable is attached to a trolley that runs on a monorail around the tower about 130 feet above ground level. Adjustable nylon lines attached to various points on the test subject's body and support equipment are run through a "spreader bar" and attached to a ring at the end of the cable.

The division-funded research program has been under the direction of John P. McCann, MD, chief of Dept. 592-0 aerospace medical group, and has been conducted by Bernard Newsom, PhD, a senior staff scientist.

After initial tests, the circular track was altered to form dips and bulges, simulating lunar craters, and plastic "boulders" of various sizes were attached for more realistic simulation of terrain.

Photos from the Convair-launched Surveyor and Lunar Orbiter spacecraft have given a good indication of the "dimpled" surface and rock distribution of proposed astronaut landing areas.

The first astronauts are expected to have three to four hours exploration time away from their Lunar Excursion Module. Distance covered from the LEM will be determined by oxygen required.

"The easy way would be for the astronauts to proceed until about half their oxygen has been used and then retrace their steps —but this would be inefficient from an exploration viewpoint," Newsom said.

"Making a circle will be preferable so no portion of the surface is covered twice. This can be accomplished safely if an accurate estimate of oxygen required can be made in advance."

Newsom said walking over a rocky area in a pressurized space suit can be compared to walking over a newly-disced field. "Even small rocks may cause one to stumble," he commented.

Life sciences personnel say the Convair simulator appears to be the most realistic developed to date for evaluating "lifetimes" of life support systems by measuring metabolic requirements of astronauts.

"The simulator provides an unlimited distance for walking and running and can be used to study pressure suits with different characteristics," Newsom said.

Walking over varying grades can be achieved by moving portions of the inclined walkway toward or away from the center point.

Researchers from government agencies involved in lunar simulation studies have visited Convair to evaluate use of the system.

People Mobility

Appointments and Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the Company.)

ALLAN C. GLASER (1960) from chief of industrial controls project at Electric Boat to Corporate Headquarters, reporting to Robert A. Wohl.

J. C. ABELS (1941) from Convair to Pomona as project administrator for Redeye; **T. F. McALEER** (1947) from Convair to production control, Pomona.

ARNOLD E. ABRAMS (1965) from Convair (Cape Kennedy) to quality assurance, Fort Worth division; **DONALD W. ST. PIERRE** (1956) from Convair to Fort Worth in 111 logistics; **FREDERICK B. PRESLEY** (1947) from Convair to Fort Worth; **JACK D. REILEY** (1957) from Pomona to aerosystems laboratories, Fort Worth; **CLIFFORD B. OHMAN** (1947) from Convair to Stromberg-Carlson Data Products as a standards engineer; **ROBERT L. COOLEY SR.** (1961) from Convair to senior design assurance engineer, Electronics-SD; **DON R. COWART** (1967) from Convair to process control, Fort Worth; **WALLACE B. CALLAWAY** (1963) from Convair to General Dynamics' Marine Technology Center; **DWIGHT H. STONE** (1952) from Convair to Fort Worth (Edwards AFB); **DONALD A. HUNTER** (1950) from Convair to configuration control, Fort Worth; **ARTHUR H. MULLER** (1955) from Convair to Fort Worth (Edwards AFB); **VERNON R. SPENCE** (1963) from Convair to Fort Worth in quality engineering; **JAMES P. MATHIS** (1957) from Convair to logistics, Fort Worth; **DONALD E. THOMPSON** (1957) from Convair to Fort Worth in field support and maintenance engineering; **MORGAN S. MALOY** (1959) from Convair to systems technology, Fort Worth; **A. VERNON MACE** (1964) from Convair to Fort Worth in general accounting; **GEORGE T. McGAVERN** (1956) from Convair to Fort Worth; **STANISLAW M. BREJNAK** (1967) from Convair to Fort Worth (Edwards AFB); **JOHN W. ENSLEY** (1958) from Convair to Fort Worth in configuration control; **JAMES A. NUGENT** (1963) from Convair (Cape Kennedy) to 111 quality assurance, Fort Worth; **CLYDE M. FOX** (1956) from Convair to Fort Worth; **SALVATORE SPECIAL** (1942) from Fort Worth to Convair as subcontract representative; **WADE M. BENDER** (1940) from Electric Boat to factory special assignments man, Convair.

General Dynamics Delegation Attends Test Pilot Session

Sixteen General Dynamics representatives attended the 11th annual symposium and awards banquet of the Society of Experimental Test Pilots last week (Sept. 28-30) in Beverly Hills, Calif.

Attendees included Edward J. LeFevre, vice president and general manager of the GD Washington Office; Frank W. Davis, Fort Worth division president; and Jack L. Bowers, Convair division general manager.

Also, H. T. Dillon, E. R. Peterson, R. L. Johnson, G. Tate, H. C. Tafe, R. J. Lutz, W. H. Harse, W. A. Shyrock, W. L. Van Horn, J. M. Fitzpatrick, G. I. Davis, W. W. Withee and V. E. Prahl.

Sessions were held on air transport, international technology, special topics and supersonic flight. Johnson, director of flight and quality assurance for Fort Worth division, was a member of a supersonic flight discussion panel.

Breakthrough Scored In Use of Beryllium

Convair division recently has achieved new "state-of-the-art" breakthroughs in the forming of beryllium, the most efficient structural material so far known for many space applications.

Beryllium, a steel-gray metal, is as light as magnesium, more rigid than steel and maintains strength at extremely high temperatures.

End fittings for experimental structures are being machined from beryllium by Convair Dept. 756 technicians under the direction of Joseph E. Carlin, manufacturing research and development Dept. 491-0 beryllium project engineer.

Joining of beryllium parts and of beryllium to aluminum also is being accomplished through brazing techniques.

In another phase, Convair has successfully formed compound curves in beryllium sheet material and stiffener sections.

"It's a challenging material to fabricate by stretching or bending because of its extreme brittleness," Carlin said.

The Nuclear Metals division of the Whittaker Corp., working under Convair specifications, now produces beryllium tubing with very thin walls through a "direct extrusion" process.

J. David Forest, a senior design engineer for Convair's research and development structural design Dept. 512-2, said the new method for tube forming eliminates material wastage of up to 75 per cent.

"It is now possible to use beryllium tubing and end fittings instead of those made of aluminum for truss structures for use in space. Weight reduction approaches 60 per cent," he said.

"Such trusses for antennas, solar cell arrays, etc., will be more rigid and less sensitive to thermal and dynamic distortions.

"We can now fabricate complex stiffened structures such as box beams from beryllium sheet material—even if hemispherical end 'domes' are required," Forest said.

Convair's beryllium program is being conducted as a joint effort by Depts. 512-2 and 491-0. Research activity next year is to include design, fabrication, and testing of a large beryllium solar power array "edge beam."

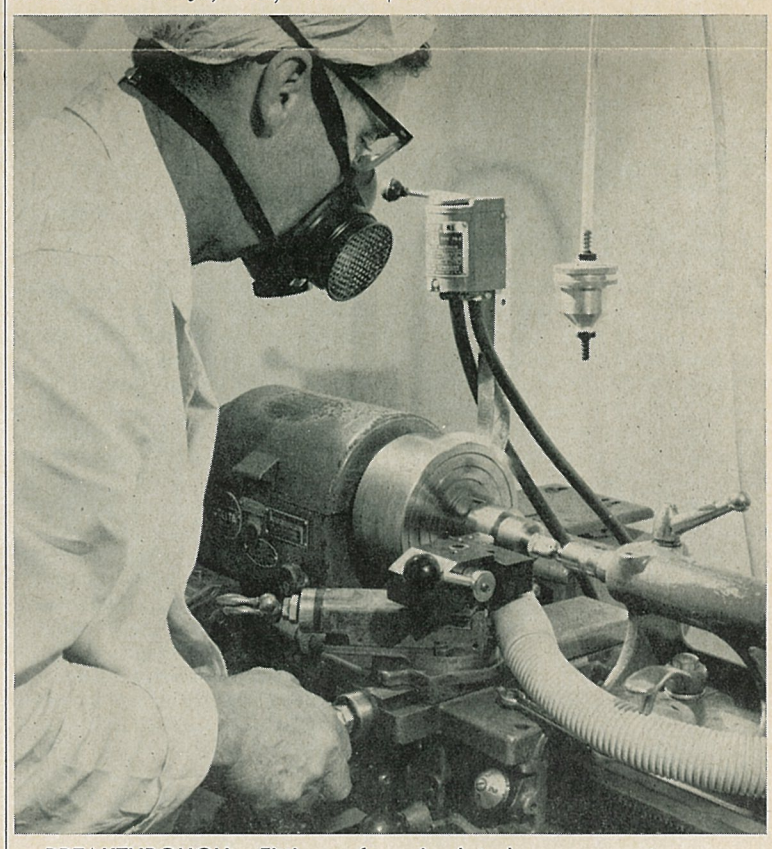
C. E. Roye, supervisor of manufacturing development, said the Convair facility is now available on a limited basis for production forming, machining and fabrication of beryllium for other General Dynamics divisions.

Although beryllium costs up to 100 per cent more per pound than gold in thin sheets or extruded sections, its cost can be more than offset by its weight saving and other advantages for space programs.

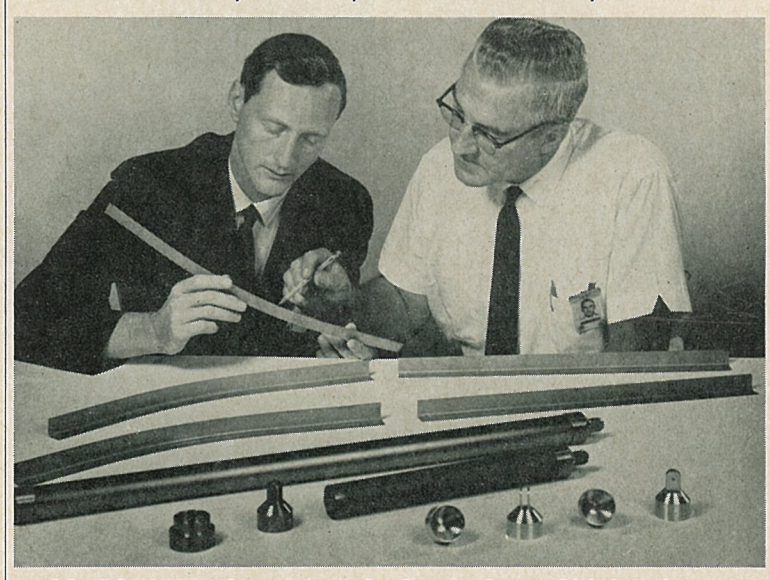
Beryllium re-entry heat shields for Project Mercury capsules weighed 350 pounds while approximately 1,350 pounds of steel or 1,750 pounds of copper would have been required for an equal amount of heat absorption.

Since beryllium is toxic in chip, dust, or vapor form, extensive safety precautions are used in the "beryllium white room" at Kearny Mesa for protection of employes.

A central suction system keeps the room under a slight negative pressure (vacuum) and suction outlets at each machine pull the toxic vapors and chips through special filters for safe disposal. Employes working in the facility wear protective clothing and face masks to meet safety requirements.



BREAKTHROUGH—Fittings for simulated space antenna are machined from beryllium in special Convair facility.



CONTOURED—Convair's J. D. Forest, Dept. 512-2, left, and J. E. Carlin, Dept. 491-0, discuss contoured angles in beryllium part. In foreground are thin-wall beryllium tubing and end fittings and at right are four aluminum fittings.

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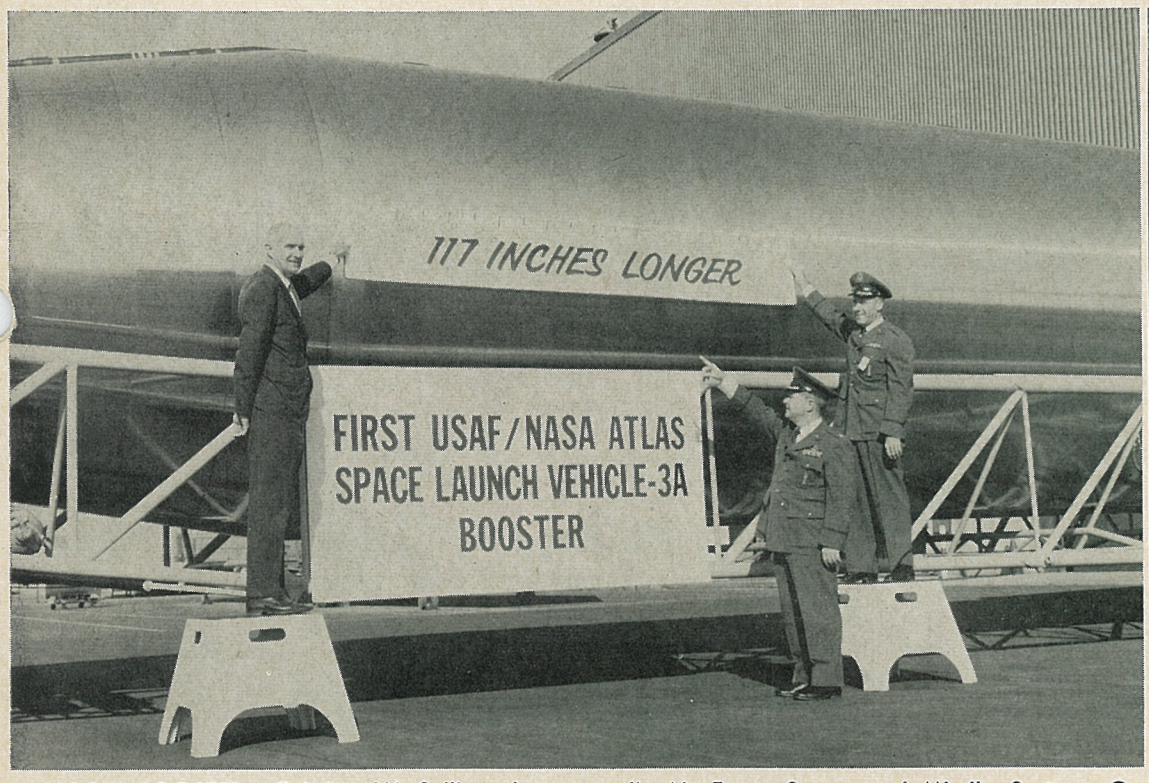


BIGGER BOOSTER—Col. Leo W. Sullivan (on ground), Air Force Space and Missile Systems Organization deputy for launch vehicles, points out longer length of first Atlas SLV-3A as Jack L. Bowers, left, Convair general manager, and Col. James R. Ourand, Defense Contract Administration Services plant representative, hold "ruler." First of the new "3As" will be launched early next year.

First of SLV-3As En Route to Cape

Convair's first new 117-inch longer Atlas SLV-3A booster was rolled out of the Kearny Mesa factory in ceremonies Oct. 6.

The new SLV-3A will carry an additional 48,000 pounds of usable propellants and has an uprated engine system for increasing thrust of booster engines to 168,000 pounds each and sustainer engine thrust to 58,000 pounds.

Present for the ceremonies were Col. Leo W. Sullivan, Air Force Space and Missile Systems Organization (SAMSO) deputy for launch vehicles; Col. James R. Ourand, Defense Contract Administration Services (DCAS) plant representative; Richard E. Jumont, assistant chief of the NASA resident office; Jack L. Bowers, Convair general manager; Richard W. Keehn, Convair Atlas SLV manager, and Joseph W. Coddou, Convair production manager for the new vehicles.

Among other Air Force, NASA, DCAS and Convair personnel attending was Ralph D. Raney, an industrial specialist for the DCAS plant representative's office, who accepted Convair's first Atlas, 1A, for the Air Force on Aug. 28, 1956.

"We are very proud to participate in this occasion in which the first of a new uprated class of Atlas launch vehicle is being accepted," Col. Sullivan said.

"It shows the Air Force's faith in Convair's ability to build one of the most cost competitive space boosters."

Col. Sullivan noted that the last 35 consecutive Atlas space booster launches had been successful and that 84 of the last 87 launches were a success.

"The reliability of the Atlas booster has been truly outstanding," he said. "The reliability, performance and cost of the Atlas is a difficult combination to beat."

The first SLV-3A, No. 5602, will be used early next year as booster for NASA's Orbiting Geophysical Observatory-E mission. It was shipped by truck from Kearny Mesa last week and is scheduled to arrive Friday (Oct. 20) at Cape Kennedy. It will be launched from ETR's Complex 13.

Jumont said he hopes the flight performance of the first of the new vehicles will equal the reliability record established in its first article configuration inspection (FACI). The FACI was conducted in July with no discrepancies being written.

Bowers said he was "pleased to see the continued development and improvement of the Atlas" as evidenced by the new SLV-3A.

"We are gratified that there are missions which can be performed more effectively by the new uprated Atlas SLV-3A and SLV-3C boosters and that they will be used both in NASA and Air Force programs," he said.

The first SLV-3A was the 521st Atlas delivered by Convair. A total of 341 had been launched, including many refurbished and updated for new missions after

(Continued on Page 2)

Over 400 Enroll For Mgt. Courses

A total of 410 Convair employes are enrolled in 17 management and professional development courses that began early this month under Convair Management Club sponsorship.

W. F. Chana, chairman of the club's management development committee, said enrollment in several courses was considerably higher than had been anticipated.

Atlas-Centaur to Send Surveyor 6 to Moon

Preparations are being completed for launch of Convair's Atlas-Centaur 14 and Atlas SLV-3 No. 5103 vehicles in two major NASA space launches Nov. 7.

AC-14 — with Convair's second Atlas SLV-3C, No. 5902, as booster and Centaur 11D as the high-energy second-stage vehicle — will send Surveyor 6 toward a soft landing on the hilly Sinus Medii near the mid-point on the lunar equator.

After being boosted into space by the new, longer and uprated Atlas, Centaur 11D will have a first "burn" of its liquid hydrogen engines, an in-space orbital coast, and a second "burn" of its engines before releasing the Surveyor for its quarter-million-mile flight to the moon.

Surveyor 6 will carry a television camera to photograph the area in which it lands and an alpha scattering experiment for chemical analysis of composition of the lunar soil.

E. E. Barringer, AC-14 project engineer, said the mission, except for the spacecraft landing area, will be almost identical to that of the successful AC-13 flight last month.

Atlas SLV-3C No. 5103 and an Agena D second-stage vehicle are to launch NASA's Applications Technology Satellite-C into near synchronous equitorial orbit.

The spin-stabilized satellite, built by Hughes Aircraft Co., is designed to return information from a series of scientific experiments during the next three years.

James L. Minos is program office engineer for the Atlas boosters for both launches.

A 31-man Convair "tiger team" from Kearny Mesa is at Cape Kennedy this week and next with Barringer and Minos for equipment assessment and flight readiness review.

Team members are: J. W. Vega, J. W. Ball, W. D. Taylor, C. C. Campbell Jr., G. K. Jerahian, B. G. Sherwood, C. W. Aulgur, R. T. Fox, G. D. Clapp, J. B. Jarman, L. R. Lisak, R. P. Mikkelson, F. L. Cook, H. G. Yett, H. J. Minch, H. E. Harper, W. E. Evans, J. M. Simmons Jr., E. R. Kimmy and J. J. Bushnell.

Also, G. R. Anspach, H. L. Hahn, F. D. Kuenzel, J. W. Taylor, A. W. Wiest, J. N. Brown, D. A. Jones, R. D. Lytwn, J. E. Geil, E. H. Christensen and J. H. Azeka.

Salvage Schedule

Next sales day at Convair salvage yard, Lindbergh Field plant, adjacent to Gate 5, will be Saturday, Nov. 11. Hours are 8 a.m. until noon. No children are allowed in the yard.

Early Returns Indicate Good Con-Trib Sign-up

Two days remain for Convair division employes to go "over the top" in the annual Convair Employes' Con-Trib-Club membership campaign.

M. V. Wisdom, director of industrial relations, said initial reports from departmental coordinators were "very gratifying." Final reports are due Friday (Oct. 20), the last day of the campaign.

The initial supply of "check" pins for employes pledging Fair Share in the campaign has been exhausted. James K. Field, chief of employe services, said a new supply has been ordered and will be distributed upon arrival.

Convair General Manager Jack L. Bowers is chairman for the campaign, which has as its goals Fair Share commitment by at least 85 per cent of the division's 13,850 employes and $450,000 in total pledges through payroll deduction.

Bowers and Wisdom kicked off the two-week "once for all" cam-

(Continued on Page 2)

Con-Trib-Club Grants Okayed

Members of Convair Employes' Con-Trib-Club committee in two recent meetings approved grants totaling $10,350 for 12 health, welfare and community service organizations in San Diego County.

Included was $2,500 to the San Diego County Heart Association for its patients' program, $2,400 to the Camp Fire Girls for use toward purchase of a pickup truck, $1,250 to Nazareth House, and $1,200 to the Foothills, Imperial Beach, Palomar, San Dieguito and San Diego Family Service Associations.

Also $1,000 to Neighborhood House for its teen and young adult programs, $1,000 to the San Diego Mental Health Association for building repairs, $500 to the Christian Businessmen's Service Center, and $500 to the St. Vincent DePaul Center.

Emergency Aid Fund grants totaling $3,100 also were approved for assistance to employe families in hardship cases.

Initial Funds Okayed For Modifying Atlases

Convair has received a letter contract from the USAF Space and Missile Systems Organization obligating an initial $1 million increment toward a contract for modification and launch of 20 Atlas F boosters for use primarily in the Air Force's ABRES (Advanced Ballistic Re-Entry Systems) programs.

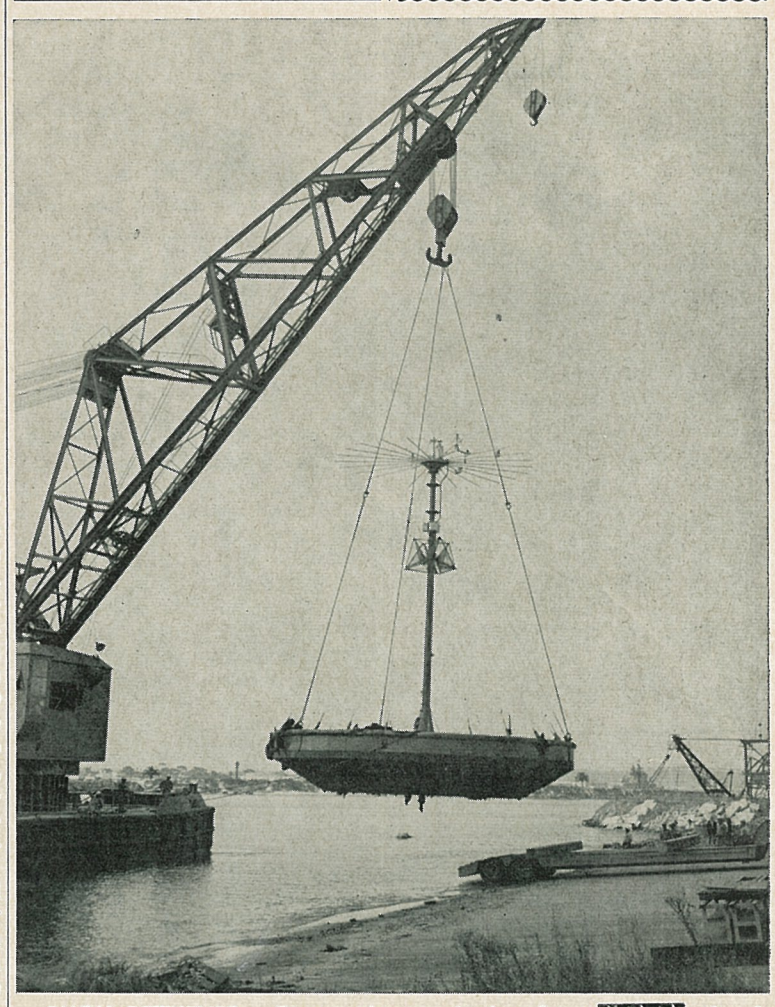
Harry S. Wurtz, manager of contracts for Convair launch vehicle programs, said the definitive contract is scheduled to be negotiated by Feb. 24, 1968.

The 20 Atlas boosters are scheduled for use in several ABRES programs, including the ABRES-Nike flight test program, and as boosters for launch of Convair-built Orbital Vehicle One scientific satellites for the Air Force Office of Aerospace Research.

The Atlas F boosters, stored since being removed from Strategic Air Command operational inventory several years ago, will be refurbished and updated for increased reliability in meeting mission requirements. Each of the 20 is scheduled for launch from Vandenberg AFB.

Wurtz said the contract, in addition to the modification and launch effort, covers program integration and logistics support services and will include flight performance incentives.

The new -0023 contract is a follow-on to the previous -788 and -0014 contracts.



BUOY RETRIEVED—Ocean data-gathering buoy, [illegible], developed by Convair for Office of Naval Research, is lifted from San Diego Bay waters by Navy floating crane, 100-ton capacity, first week in October. [illegible]

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Oct. 1 and Oct. 15.

Thirty-five-year: Dept. 019, W. P. Moore.

Thirty-year: Dept. 031, E. C. Puterbaugh; 045, W. J. Cole; 761, W. F. McGrath.

Twenty-five-year: Dept. 059, F. R. Blake; 130, J. C. McCarthy; 143, M. Buchko; 144, W. W. Berger; 300, L. E. Starkey; 401, M. P. Rebeles; 508, W. E. Heathman; 715, O. Gniffke; 756, R. E Gumtz; 832, J. A. Gabriel.

Twenty-year: Dept. 031, Margaret W. Coulston, F. J. Fischl; 195, M. D. Wolfe; 250, C. F. Ley, R. D. Snodgrass; 400, J. Klein Jr.; 401, M. A. Jones; 715, M. B. Cottrell; 763, H. C. Allison, J. H. Evans.

Fifteen-year: Dept. 005, E. P. Newman; 019, Medoline J. Davis; 031, A. Lopez, W. S. Sowa; 130, D. E. Dunn, R. Leeper; 193, Irene E. Marr; 196, Mary B. Showers; 250, G. L. Zuniga; 400, C. A. Roswell; 401, W. Jurney, W. E. Pankratz; 532, O. E. Fatica; 565, C. A. Lab; 587, J. A. Dall; 731, V. Ruiz; 810, D. V. Colt; 842, M. C. Hight; 954, J. E. Beebe; 988, C. M. Horton.

Ten-year: Dept. 143, Maxine V. Downing, J. L. McNeel; 170, Nelly E. Gross; 192, Patricia E. McPheeters; 195, H. O. Brooks; 400, G. W. Eberle, R. L. Middleton; 401, G. W. Kahler; 507, A. E. Brady; 518, Amelia L. Morkowski; 524, Marilyn R. Dehner; 541, M. D. Bear; 553, D. N. Hawk Jr.; 565, Maude R. Hubler; 595, W. R. Gillis; 832, Dorothy T. Hammell; 833, Anna H. Fuller; 954, W. H. Robinson, A. Shaklee; 961, W. Gershon.

STROMBERG-CARLSON

Fifteen-year: Dept. 85, J. H. Brown.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Sept. 29.

Dept. 005-0, N. Meeks; 015-0, S. Brown (two awards); 019-0, G. Armstrong; 019-0, G. A. Rehkopf (four awards); 059-1, F. A. Oddo; 059-3, R. L. Kellogg; 130-8, B. J. Jones; 144-1, N. W. Lenten, W. G. Lux; 149-0, D. K. Mitchell; 149-3, S. Witkoff; 149-5, B. H. Clark; 250-5, J. H. Rayney; 401-0, J. E. Strachan; 410-0, J. G. Hickey; 420-4, C. E. Buchanan; 519-0, J. L. Martin; 715-0, J. Friel; 717-0, D. P. Grace; 761-0, F. O. Fernandez, R. L. Long (two awards), C. E. Roach Jr. (two awards); 780-1, P. C. Pond; 957-0, R. R. Reekers (two awards); 946-4, R. M. Mitchell; 979-1, S. K. Baker, R. J. Brackett, B. B. McClure; 979-2, R. W. Sather.

Employe Suggestion awards approved for the week ending Oct. 6.

Dept. 015-0, W. R. Coyle, P. B. Kopack, L. W. Tracy; 019-0, R. H. Stohr, D. R. Wilson (two awards); 027-0, P. W. Byrd; 031-0, D. E. Hanson, J. Nonzeta, B. A. Shourds; 045-0, I. D. Howarter; 059-5, T. A. Anderson; 130-1, J. H. Cooper; 142-1, C. L. Cheves, W. A. Dershem, J. P. Flatley, L. E. Johnson, A. W. MacRae, D. E. Palmer; 144-1, F. R. Glick; 144-2, R. H. Poulsen; 149-0, G. A. Gibbons; 149-8, B. A. Ross; 250-3, J. T. McElroy; 400-6, C. Lea; 524-5, M. E. Gallagher, R. G. Triplett; 831-0, C. R. Elliott; 833-2, S. B. Huggins; 850-0, A. L. Deane; 962-5, T. C. Prebys; 979-1, J. H. Siems.

CONVAIR SERVICE CENTER

Dept. 300-2, N. Mussen.

Retirements

CONVAIR

CARSON—Karl R., Dept. 758. Seniority date Sept. 5, 1934, retired Aug. 25.

DAVIES—Edgar, Dept. 057-0. Seniority date June 29, 1953, retired Sept. 29.

EVANCHO — Charles K., Dept. 131. Seniority date March 6, 1943, retired Sept. 29.

HILL—August E., Dept. 780-0. Seniority date Aug. 15, 1949, retired Sept. 29.

KIEHL—Ralph A., Dept. 491-0. Seniority date Dec. 9, 1952, retired Sept. 29.

MALLAMS — Robert V., Dept. 250-6. Seniority date May 7, 1954, retired Sept. 29.

McGRATH—William F., Dept. 761-0. Seniority date April 28, 1950, retired Sept. 29.

McPHERREN — Glen E., Dept. 006. Seniority date March 3, 1952, retired Aug. 20.

SCHNAUBELT—Herold J., Dept. 420-8. Seniority date Jan. 2, 1936, retired Sept. 29.

STEVENS—Ella M., Dept. 521-6. Seniority date April 22, 1957, retired Sept. 29.

TREPINA — Sylvia R., Dept. 005-0. Seniority date Sept. 29, 1950, retired Sept. 29.

Rider-Driver

CONVAIR

SHARE RIDE—From National City to Kearny Mesa plant, 7:30 a.m. to 4:15 p.m. shift. Phone Carl Chunn, ext. 1461 KM or (home) 477-2492.

RIDERS WANTED — Hillcrest-North Park area to Kearny Mesa, 7:30 to 4:15 shift. Phone Henry Pawlicki, ext. 3073 KM or (home) 295-1331.

RIDE WANTED—From Chula Vista to Plant 19, 7:00 a.m.-3:30 shift. Phone D. Perkins, ext. 2012 LF.

RIDE WANTED—From Linda Vista Rd. and Goshen St. (near University of San Diego) to Kearny Mesa, 7 a.m. to 3:45 p.m. shift. Phone Dan Ognibene, ext. 1393 KM or (home) 298-4089.

RIDE WANTED—From Santee or El Cajon to Kearny Mesa, 4:30 p.m. to 1 a.m. shift. Phone Christine Ledger, ext. 2420 or 2652 KM.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Papers Presented

CONVAIR

GRIGGS—M. and C. R. CLAYSMITH, Dept. 596-0, "Aircraft Measurements of Terrestial Radiation and Atmospheric Attenuation in the 8 to 14-u Atmospheric Window." International Association of Meteorology and Atmospheric Physics, Lucerne, Switzerland, Sept. 25-Oct. 7.

LUDWIG—C. B., Dept. 596-0, "The Curves of Growth of Water Vapor Between 1200 and 3000 degrees K." Ninth European Congress on Molecular Spectroscopy, Madrid, Spain, Sept. 10-15.

MYERS—B. F., Dept. 596-0, "A Shock Tube Study on the Radiative Combination of Oxygen Atoms by Inverse Predissociation." American Chemical Society Meeting, Chicago, Ill., Sept. 11-15.

Papers presented at the Marine Technology Society's Buoy Symposium, Washington, D.C., Sept. 18-20:

KOSIC—R. F., K. A. MORGAN, L. A. SCOTT, R. F. DEVEREUX, Dept. 506-5, "Long-Range Telemetering From the Monster Buoy." K. A. MORGAN, L. A. SCOTT, R. F. DEVEREUX, Dept. 506-5, "The Monster Buoy—Its Data Acquisition and Telemetry/Command Systems." S. T. UYEDA, J. H. NATH, R. KOSIC, R. F. DEVEREUX, Dept. 506-5, "Two Experimental Moorings of a Large Oceanographic Buoy in 13,000 Feet of Water Near Bermuda."

Papers presented at the AGARD Seminar on Numerical Methods for Viscous Flows, Teddington, England, Sept. 18-21:

MAGNUS—R. J., W. H. GALLAHER, Dept. 583-1, "Rarefied Hypersonic Flow Over the Forward Part of a Blunted Cone." H. U. THOMMEN, "Integration of the Unsteady Navier-Stokes Equations by Finite Differences."

Papers presented at the AIAA Joint Electric Propulsion and Plasmadynamics Conference, Colorado Springs, Colo., Sept. 11-13:

LARSON—A. V., Dept. 596-0, "Experiments on Current Rotations in an MPD Engine." L. LIEBING and A. V. LARSON, Dept. 596-0, "Probe for Ion Velocity Distributions in Plasma Accelerator Exhausts."

Papers presented at the 22nd Annual International Conference of ISA, Chicago, Ill., Sept. 11-14:

FERRIS—D. J., Dept. 578-4, "A Flight Strain Gage for a Liquid Hydrogen Tank Skin." H. O. STORY, Dept. 142-0, "Administration by Reliability Control."

Invention Disclosures

CONVAIR

BRITTAIN—H. G., Dept. 578-1. Pressure Rise Rate Transducer.

CHRISTIAN—J. L., Dept. 572-1. Metal Core—High Modulus Electrodes.

DETHLEFSEN—R. and J. J. ROSCISZEWSKI, Dept. 596-0. Helicopter and VTOL Aircraft with Automatic Balance of the Angular Moment.

ROSCISZEWSKI—J. J. and S. KAYE, Dept. 596-0. Portable Reverse-Osmosis Water Purification Device.

SCHULER—A. L. and R. C. WHITE, Dept. 952-5. Rolling Metal Diaphragm.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Monday, Oct. 23. Lindbergh Field, ext. 491, Bldg. 14 auditorium, first shift, 8 a.m., Tuesday, Oct. 31; second shift, 4:30 p.m., Tuesday, Nov. 7. AF Plant 19, ext. 491 LF, Bldg. 3, 1st mezz., Col. B-14 conference rooom, 8 a.m., Thursday, Oct. 19.

PROFESSIONAL/TECHNICAL

DAMAGE PREVENTION—Lindbergh Field, first shift, Wednesdays and Thursdays, 8-9 and 10-11 a.m., Oct. 18, 19, 25, 26, Nov. 1, 2, 8, 9, 15, 16, Bldg. 14 auditorium. For information call W. F. Weidenfeller, ext. 1931 KM.

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Educational services office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Personals

Thank you for your kindness and sympathy at a time when it was deeply appreciated.

Mrs. George E. Ray

Deaths

CONVAIR

BRYSON—Charles L., Dept. 780-1. Died Oct. 4. Survivors include his wife, Lanese A.

First SLV-3A On Way to Cape

(Continued from Page 1)

being stored since they were retired from Strategic Air Command operational inventory.

OGO-E, the satellite for which the first SLV-3A will serve as booster, will carry a group of experiments for measurement of magnetic fields, ionosphere distribution and levels of energetic particles, radio propagation, very low frequency noise and propagation, interplanetary particles and atmospheric composition.

Convair is building five of the new Atlas SLV-3As under the initial contract with the last scheduled for delivery in August, 1968. Four of the five are for use in classified Air Force missions.

The SLV-3A and an Agena second-stage vehicle will be capable of injecting a 7,950-pound payload into a 100-nautical-mile orbit from ETR.

Nine new SLV-3C boosters, for use with Centaur second-stage vehicles, also are being produced by Convair. The SLV-3C is 51 inches longer than its predecessors and carries an additional 21,000 pounds of usable propellants.

Clark Named To New Factory Manager Post

R. A. Clark

Richard A. Clark has been named Convair factory manager of fabrication, assembly and checkout (Dept. 700-0), reporting to Robert G. Daly, manager of Kearny Mesa operations.

Clark, a Convair employe since 1955, has been superintendent of Atlas and Centaur final assembly, checkout and combined systems test since April.

He previously served as site manager and test conductor during two tours of duty at Vandenberg AFB; was Convair base manager at Walker AFB, N. M., for the Atlas F-update program; and served as a design specialist, test conductor and chief test conductor at Edwards AFB.

Clark has conducted 35 Atlas launches — more than any other Convair launch conductor — and was in charge of the build-up and hot firing of the first boilerplate "Atlas" in 1956 at Edwards.

Reporting to Clark are Lee Ely, general foreman of vehicle final assembly Dept. 761-0; H. M. Brown Jr., test conductor for vehicle checkout and CSTS Depts. 763-0 and 763-1; Robert Franklin, general foreman of MK-56 mines assembly Dept. 717-0; H. C. Mcdearis, general foreman of Air Force Plant 19 assembly Depts. 715-0, 744-0 and 758-0; J. M. Kline, general foreman of Kearny Mesa plant fabrication Depts. 731-0, 732-0 and 733-0; and F. E. Grossher, general foreman of engineering test support Dept. 756-0.

Centaur final assembly Dept. 762-0 and Atlas final assembly Dept. 761-0 have been merged to form vehicle final assembly Dept. 761-0 under Ely.

Gray Again to Head Sheltered Workshops

E. G. Gray, a program coordinator for Convair's manufacturing operations Dept. 403-1, has been re-elected president of Sheltered Workshops of San Diego, Inc., an industrial contract production facility for training physically and mentally handicapped.

Gray, a Convair employe 27 years, became Sheltered Workshops president earlier this year when the incumbent left for employment in England. He previously had served as technical vice president and executive vice president.

Here Are Correct Safety Crib Hours

New safety crib hours at Air Force Plant 19 were reported incorrectly in the Oct. 4 GD/NEWS.

The safety crib at Air Force Plant 19 is open 12:45 to 2:15 p.m. Mondays, Wednesdays and Fridays and 3:15 to 5:15 p.m. Tuesdays and Thursdays.

$909 PAYOFF—T. A. Anderson of Convair Dept. 059-5 shows $909 check for his Employe Suggestion to, from left, George Davidson, general foreman of dispatch and stores in operation and administration control; Addie Stevens, secretary; and, far right, W. M. Becker, supervisor of dispatch and stores coordination section.

Duplication of Effort Spotted; Suggestion Payoff Comes to $909

T. A. Anderson of Convair Dept. 059-5 will have no trouble paying for his new color television. He can use the $909 Employe Suggestion award he earned for reducing posting operations to save the division $9,090.

Anderson, manufacturing coordinator in the dispatch and stores function of operation and administration control, found that information on Cardex files kept in the AGE stockroom in Bldg. 4, Lindbergh Field, duplicated other records.

His suggestion eliminated the posting of factory completed orders on shop-made detail parts for the AGE program. The same information is maintained in ordering section records in production control.

Also eliminated is the posting of receipt on low-dollar value standard inventory material delivered to the stockroom by a requisition. The same posting operation is done in material control records.

Altogether, 60 manhours a week have been saved.

Vacuum Technique Subject For Textbook

Dr. Pieter K. Rol, staff scientist in Convair's space science laboratory, is author of a book on vacuum technique which has just been released by a publishing firm in Amsterdam, The Netherlands.

Manuscript of the book, "Inleiding tot de Vacuumtechniek," or translated, "Introduction to Vacuum Technique," was written by Dr. Rol in Holland before he came to the United States to join Convair a year ago. It is written as a textbook for use in engineering courses in Dutch speaking countries.

At the time he gathered material for the book, Dr. Rol was research leader at the FOM Institute for Atomic and Molecular Physics at Amsterdam. He spent 1960-62 in San Diego at Convair and the former Astronautics division as an exchange physicist.

Landry Selected For Sales Post

David P. Landry has been appointed to the newly-created position of general sales manager for Stromberg-Carlson Data Products, according to Carl V. Shannon, general manager.

In his new post, Landry will be in charge of Data Products' five sales districts and the sales representatives assigned to them. He will have headquarters at the Hancock St. plant in San Diego.

Dave Landry

Landry has been district sales manager of the Southern District, working out of Miami, Fla., since April of this year.

He came to Stromberg-Carlson from RCA where he had been employed in managerial capacities for six years. He was RCA branch manager at Coral Gables, Fla., at the time he left that company. Before that he had been national accounts manager of the General Telephone and Electronics division in New York City and manager of the utility and transportation function at Cherry Hill, N.J.

A native of Washington state, Landry was with the Pacific Power and Light Co. at Portland, Ore., from 1954 to 1961. He was electronic data processing supervisor when he left to join RCA.

He served in the Army from 1943 to 1947, holding the rank of first lieutenant at his discharge. He received his bachelor's degree from Marlboro College, Vt., and had attended Lemania College, Lausanne, Switzerland, the University of Alabama, and Reed College.

Early Con-Trib Results Indicate Good Response

(Continued from Page 1)

paign in meetings for supervisors Oct. 3 at Kearny Mesa and Lindbergh Field and Bowers has written each employe urging full support for the "united" giving concept.

"Our Con-Trib-Club's annual contribution to the United Crusade is the largest single industrial donation," Bowers said. "This proves to me that Convair employes really do care and that we recognize our moral responsibility to take part in the crusade against crippling diseases, poverty, sickness and the many other conditions that can befall any of us."

Wisdom, in the supervisors' meetings, said approximately 70 per cent of the amount that will be received by Con-Trib-Club has been pledged to the United Crusade for support of United Community Services' 75 member health, welfare, youth and community service organizations.

He said an additional 20 per cent will go to agencies such as the Heart and Cancer societies that do not receive support through UCS.

The remaining 10 per cent will be earmarked for the Con-Trib-Club's Emergency Aid fund for employe families.

Each employe has received a Con-Trib-Club brochure outlining some of the club's benefits and giving a breakdown on distribution of funds since July, 1952. Additional copies are available at employe services offices.

Tickets Go on Sale For Affairs Panel

American Broadcasting Co. foreign correspondents will report on recent developments in their assignment areas in a special United Nations Week program at 8 p.m. Monday (Oct. 23) in the San Diego Civic Theatre.

Peter Jennings will be moderator with panelists including Bob Young from London, John Rolfson from Paris, Sam Jaffe from Hong Kong, Don North from Viet Nam and Keith McBee from Washington.

Tickets are on sale at all employe services outlets at $2 for adults and $1 for students.

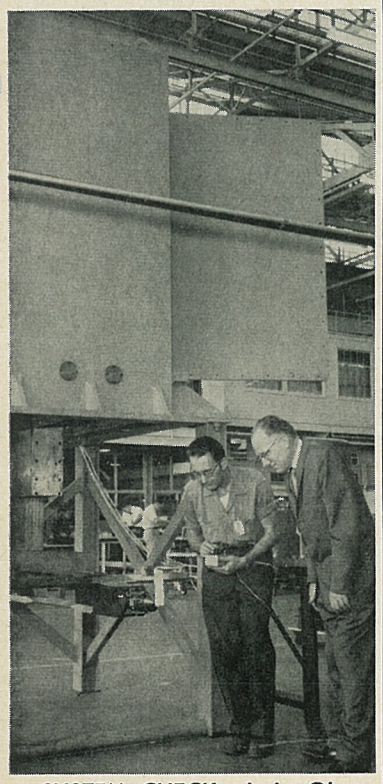
Ray T. Blair Jr., assistant to the Convair general manager, is chairman of the Mayor's United Nations Week Committee.

Wind Tunnel Testing System Delivered to Engineer Center

Convair last week delivered a sophisticated computerized system for determining trajectory of airborne missiles in wind tunnel testing to the Air Force's Arnold Engineering Development Center, Tullahoma, Tenn.

The captive trajectory support system, designed and built at Convair under an Air Force contract received a year ago, will be installed in the Propulsion Wind Tunnel Facility operated by ARO, Inc., at the Arnold Air Force Station at Tullahoma.

The system is similar to one installed in Convair's high speed wind tunnel just over two years ago. Besides the two made by Convair, there are only a couple of other such systems with the same capability in use in this country.



SYSTEM CHECK—Irvin Olson, Convair senior design engineer, right, and Nolan Eldridge, Dept. 031 bench machinist, check captive trajectory support system before shipment to Arnold Engineering Development Center, Tenn.

The system helps determine optimum integration of a missile or "store" with a particular type of aircraft. Small models, 4 or 5 inches long, are attached to a strain gaged balance in the nose of the support and positioned along the wings or fuselage of a model aircraft as if they were airborne.

Six degrees of freedom—vertical, axial, horizontal, pitch, yaw, and roll—are provided. Power is from six servo motors in a large overhead chamber which is attached to the outside tunnel shell for easy access and servicing. A motor controller for each mode of operation is directed by computer in the wind tunnel.

The balance in the missile model sends force data at separation to a computer which combines this data with the dynamic characteristics of the full-scale missile and computes a resultant trajectory. This trajectory is transmitted through the computer to the mechanism, and the missile is "flown" from the parent airplane.

The system is designed for use at either subsonic or supersonic speeds.

Design of the Convair-built systems was done by Irvin Olson, senior design engineer in the aero laboratory design group. The Air Force system was built in Convair's experimental department.

S. A. Griffin, aero lab group engineer, said that negotiations are now under way for two other systems for outside customers.

Convair Sons Win In Tennis Tourney

Mark McLaughlin, son of John McLaughlin of Convair's Dept. 130-1, received his first tennis instruction in the summer class sponsored by the CRA Tennis Club—and learned well!

Mark early this month won the 11 to 13-year-old singles crown in the Bill Rubin Memorial tournament in Clairemont.

Also among tournament champions was Rick Norwood, son of Cecil Norwood of Dept. 967-4.

Lucille Metcalf Will Retire Soon

Lucille Metcalf, who has been with Convair and its predecessor longer than any woman still with the company, will retire next week. Lucille, secretary in quality assurance at Lindbergh Field plant, joined Consolidated Aircraft in 1924. Friends will toast her retirement at a no-host party Friday, Oct. 27, at the Islandia Hotel on Mission Bay between the hours of 5:30 and 7:30 p.m.

Sealab III Is Meet Topic

Capt. William M. Nicholson, manager of the U.S. Navy deep submergence systems project office in Washington, D.C., will outline plans for the new Sealab III project at the Convair Management Club dinner meeting tonight, Oct. 18.

Meeting place has been changed to the Stardust Hotel. It had originally been announced as the Balboa Park Club.

Social hour will be at 5:30 p.m. with dinner at 6:30. A short business meeting at 7:30 will precede the "Man in the Sea" program.

Capt. Nicholson's talk on Sealab III will highlight the evening. The Sealab III project will be conducted off San Clemente Island next spring with San Diego serving as its home port and aquanaut training center.

Ronald Sweig, public affairs officer for the Navy's deep submergence office in San Diego, also will narrate a slide presentation and moderate a panel discussion at tonight's meeting.

TICKETS ON SALE

A limited number of tickets to S. D. Rockets and S. D. Gulls games are on sale through CRA.

Retirees Sought As Counselors

General Dynamics retirees who possess special management skills have been asked to consider volunteering their services to counsel small businesses through the U.S. Small Business Administration's SCORE (Service Corps of Retired Executives) program.

SCORE volunteers with experience in various aspects of business and industry share their "know how" and ideas as counselors. In most cases, the volunteer "expert" visits the small businessman requesting aid, observes and analyzes his operations or plans, and provides guidance.

There are 180 SCORE chapters across the country. Additional information and applications for volunteers can be obtained from any Small Business Administration field office.

Typical of former General Dynamics employes who are serving in the SCORE program is Robert A. Belden, who spent 13½ years with the former Corporate offices in San Diego, Convair, the former Astronautics division, Stromberg-Carlson Data Products and Electronics-SD.

Belden has provided advice for 12 small business owners, ranging from a baker to manufacturers of equipment, since 1965.

"We are always in need of seasoned success men for this program," Dennis Nelson of the SBA field office in San Diego said. "They know what small business means to American free enterprise."

Gift of Electronics, Antenna in Service Linking U.S., Viet Nam

An antenna donated to the Military Affiliate Radio System (MARS) station at Cam Rahn Bay, Viet Nam, by the Electronics division of General Dynamics has been installed, it was reported by John Manfreda, a division field service engineer, who recently returned.

Manfreda had been instructing both American and Vietnamese soldiers in the use of the tactical radio, AN/GRC-106, that Electronics manufactures in Rochester, N.Y.

The MARS radio network provides patch and message service to the United States for military personnel. Amateur radio clubs operating as MARS affiliate stations can relay the messages to families in this country.

The MARS station at Cam Rahn Bay had needed a new antenna to improve their broadcast operations and it was shipped earlier this year as a gift from the Electronics division.

You Can Become Regular Bond Buyer For 50 Cents a Week

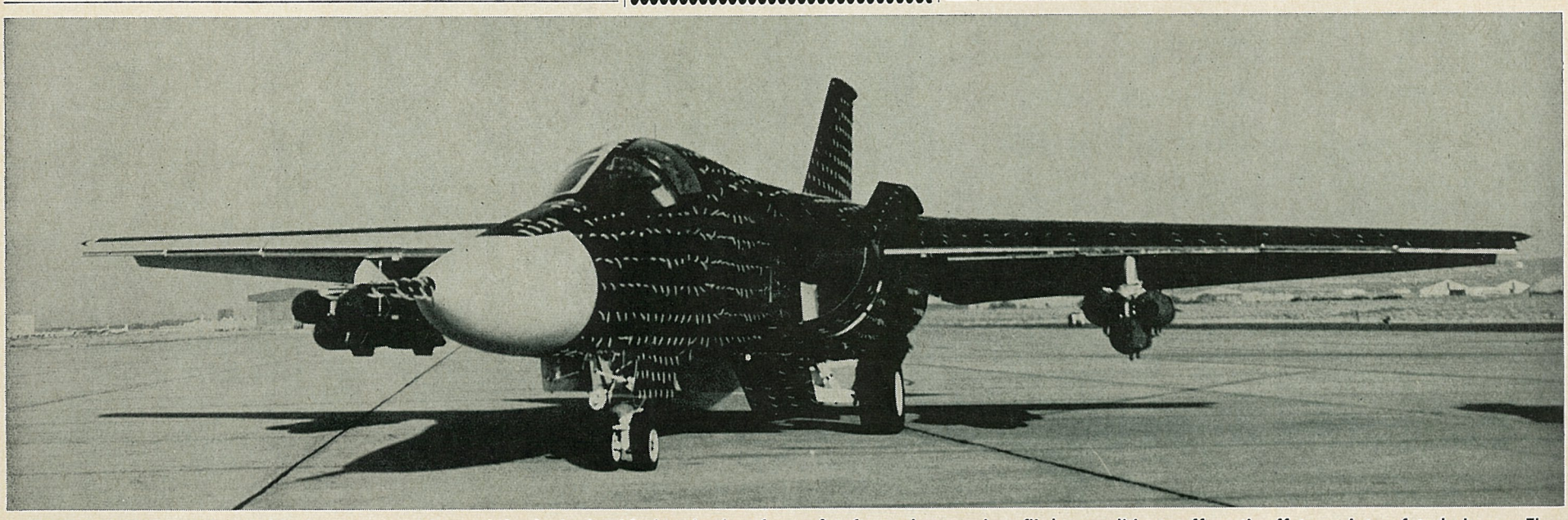
HOUR REGAINED—Roseanne Cullney, Electronics-San Diego clerk typist, points to 2 a.m. time to turn clock back on Sunday, Oct. 29, when Standard Time will go into effect in states now on Daylight Saving Time.

People Mobility

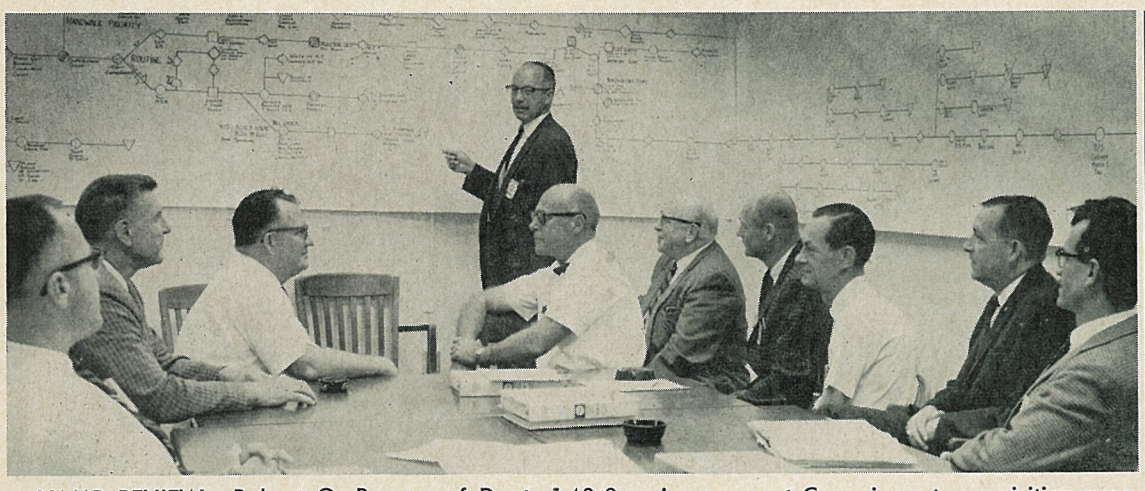
Appointments and Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

GEORGE MURRAY (1960) from Canadair Ltd. to GD International as manager of Ottawa, Ontario, Canada office; **WILLIAM A. McGOWAN,** formerly with Olin Mathieson, has been appointed manager of Corporate Headquarters Accounting, reporting to **H. E. WALL; ROBERT T. COYLE,** formerly with Avon Products, and **JAMES W. SHEA,** tax attorney and former Internal Revenue agent, have joined Corporate Headquarters Tax Dept., reporting to **J. P. ROSS; WILLIAM F. FINNERAN,** formerly with TWA, has been named assistant to Corporate director of Internal Auditing, reporting to **E. J. TUCKER; DAVID ROWE,** formerly with Chusid & Co., has joined Corporate industrial relations, reporting to **JAMES L. BUDROS; NORMAN E. WEBB** (1963) from Convair to manufacturing control general foreman, Pomona Division; **BARTON S. WALLACH** (1960) from Convair to Electronics-SD as senior design assurance engineer; **WILLIAM H. NICOLSON** (1962) from Convair to configuration control specialist, Electronics-SD; **LOUIS F. GREEN JR.** (1954) from Convair to General Atomic; **RICHARD A. AURELIO** (1966) from Convair to design engineer, Pomona; **CLINTON J. FEREDAY** (1960) from Electric Boat to Pomona as employment interviewer; **HAYDON E. LA NOIS** (1951) from Convair to Electric Boat; **RAYMOND M. BRENNAN** (1961) from Convair to Electric Boat; **WILLIAM J. SCANLAN** from Stromberg-Carlson, Rochester to marketing administrator, Stromberg - Carlson Data Products; **ROBERT R. DONAHUE** (1957) from Convair to Electronics, Rochester; **LLOYD J. LAUFFER** (1956) from Stromberg-Carlson, Rochester to Electronics, Rochester; **DONALD R. GLAZE** (1958) from Stromberg-Carlson, Rochester to Electronics, Rochester; **JEFFREY K. BREISETH** from Stromberg-Carlson, Rochester to budget analyst, Stromberg-Carlson Data Products.



TUFT TESTING—Painted black on one side and bedecked with hundreds of nylon tufts, F-111A No. 23 is undergoing wind-flow tests at Edwards AFB. Behavior of tufts under varying flight conditions offers tipoff to points of turbulence. Flow of tufts is watched by observers in chase planes and photographed.



VAMP REVIEW—Robert G. Roscoe of Dept. 142-0 reviews current Convair parts acquisition processes for value analysis in management practices (VAMP) team. Observing are, from left, Frank Virgadamo, Roy Lessard, Andy Woodington, Ed Doyle, Sidney Levinson, Charles Baker, Ed Carlson, Warren Ridge, Rene Collette.

Bicyclists Schedule Ride to Otay Mesa

CRA Bicycle Club members have scheduled a 50-mile Otay Mesa ride Saturday (Oct. 21).

The group will start from the Bank of America at Jamacha and Sweetwater Roads, Spring Valley, at 7:30 a.m. and pedal along Sweetwater and Paradise Valley Roads to National City and Chula Vista and return via Telegraph Canyon, Otay and Jamacha Roads.

Additional information can be obtained by calling Pete Larson, ride leader, at General Atomic, ext. 1370 or (home) 463-3098.

The club's 20th 200-mile jersey was awarded to Max Sturman of Convair's Dept. 780-2. Several members are nearing 800 miles on club-sponsored rides.

Short rides are being continued this month with groups leaving CRA Clubhouse at 2 p.m. Sundays.

Deadline Approaches For Dog Race Tickets

Convair Management Club members have until next Wednesday to buy tickets for the group evening at the Greyhound Races at Caliente Race Track, Tijuana, on Saturday, Oct. 28.

Members will gather in the Clubhouse at the track for a no-host social hour at 7:30 p.m. and dinner at 8:15. Strolling mariachis will furnish music.

Races begin at 8 p.m. The feature race will be named for the Management Club.

Tickets at $2.50 each for dinner and admission to the track are on sale by Boosters at all locations.

Corsage Instruction Course to Continue

Corsage-making instruction will be continued at the Nov. 1 meeting of the Convair Garden Club, 7:30 p.m., in the Floral Association Bldg., Balboa Park.

Over 40 attended this month's session at which Carolyn Buman demonstrated the basic fundamentals of making a corsage.

Members are furnishing flowers and the club is providing ribbon, wire, tape, and all other necessary materials.

The classes probably will be held for three more sessions and are open to all General Dynamics families.

Toastmasters Club Installs GD Men

Three General Dynamics employees have been installed as new officers of North Shore Toastmasters Club.

Ronald J. Wagar of Convair's Dept. 986-4 is president, Manuel Mariscal of Stromberg-Carlson's contracts department is educational vice president, and Norman A. Takvam of Convair's Dept. 978-1 is administrative vice president.

The club meets at 6:30 p.m. Thursdays at Sambo's Restaurant, 4865 Harbor Dr. Prospective members are invited to attend.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Analysis Expected to Produce Better Equipment Utilization

Convair division's first major value analysis of management practices (VAMP) team is reviewing operations of the division's standards and calibration laboratories (Dept. 142-0) and will recommend procedural changes for obtaining optimum value from work being performed.

The VAMP team is composed of representatives from each major department involved in any way with calibration practices and equipment procurement and use and is chaired by E. D. Heller, manager of cost reduction and value control, with Warren J. Ridge, cost reduction and value control staff representative, as vice chairman.

Other members and areas they represent include Ray Eichman, launch vehicle programs: Roy W. Lessard, reliability control; Ed D. Doyle, finance; Charles Baker, Kearny Mesa operations; Al Blakey, Lindbergh Field operations; and Ed W. Carlson, research and engineering.

VAMP teams will utilize both value engineering and work simplification techniques in determining how improvement may be made in both personnel and "paper work" practices.

The team reviewing the standards and calibration labs is being assisted in analysis of paperwork and data systems by three special teams captained by Dept. 142-0 representatives.

A calibration data system team is captained by J. E. Vondracek with Baker, Blakey, V. L. Brierley, R. E. Bailey, and B. W. Pesta as members.

A test equipment control system team is captained by S. A. Levinson with members including Carlson, B. R. Bates, Frank Jenkins, J. L. King and E. H. Boardman.

A material storage and acquisition system team is captained by R. G. Roscoe with T. E. Becht, R. C. Fildes and S. J. Rose as members.

Each team has prepared "flow charts" to give the VAMP team a "bird's eye view" of procedures now being used and their effect on other departments and functions. A similar chart also has been prepared on Dept. 142-0 tasks.

A. J. Woodington, chief of the standards and calibration labs, said one major problem being reviewed in detail is the amount of test equipment being maintained within the division.

"Equipment may be standing idle at one location while it is needed elsewhere," he said. "Maximum utilization of each piece of equipment is important since purchase of duplicate equipment is costly and each unit must be calibrated on a regular schedule."

Heller said the VAMP team's review also is expected to result in simplification of the system for obtaining parts for use in standards and calibration equipment by streamlining procurement procedures.

"Recommendations implemented should result in considerable saving of both time and money," he said.

Members of the team were briefed on VAMP techniques by Everett Lindem, an educational specialist in Dept. 130-3, before beginning the review.

Two pilot VAMP seminars held previously were attended by selected representatives of launch vehicle programs, research and engineering, operations, finance and reliability control departments.

Ace Scored on Tough Torrey Pines Hole

J. J. Swarts shot his first golf ace the end of September while playing with a La Jolla foursome over the Torrey Pines south course.

His hole-in-one was scored on the 215-yd. No. 11 hole.

Swarts says he's been trying for this kind of shot all the 10 years or so he has been following the ball around.

Rockhounds Slate Rainbow Ridge Trek

Convair Rockhounds will travel 200 miles to Rainbow Ridge this weekend to search for rainbow jasper.

The area in El Paso Mts. is off of Hwy. 395 north of Johannesburg. The turn-off will be marked by a sign.

Rockhounds will meet there Saturday morning, Oct. 21. Collecting areas and campsite will be selected after lunch when everyone has gathered. Since the area is dry, members should bring water. Rockhounds are reminded to carry their club ID badges.

For transportation or information call G. M. Halterman, 444-5943.

Discrepancy Cards Developed For Reporting Air Line Leaks

Convair employes who use in-plant compressed air lines and equipment have been asked to aid in reducing utility costs by locating and notifying the plant engineering maintenance department of air leaks.

Utility discrepancy cards (Form A-3936) can be obtained from supervisors in production or assembly areas or by calling ext. 2111 KM or 575 LF. One section of the card is to be attached to the faulty line or other air leak location and the other section sent to maintenance through inter-office mail.

Eugene W. Wendt, Dept. 250-2 utilities economy program engineer, said even small leaks result in a large volume of air loss and increase compressor operation costs.

"For example, a 1/16-inch opening at 100 pounds per square inch pressure will allow escape of 182,272 cubic feet of air per month, a ¼-inch break will waste 2,920,840 cubic feet," he pointed out.

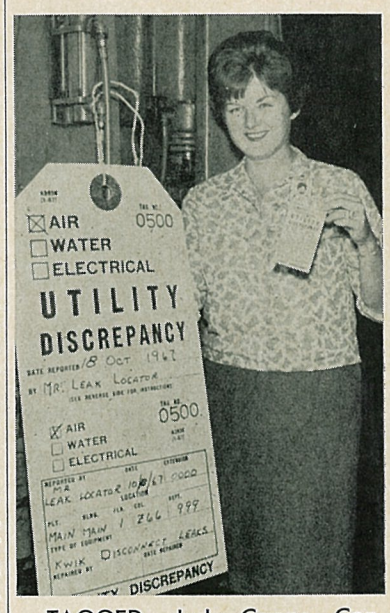
Richard D. Leonard, Dept. 250-2 general supervisor, said a check of the compressed air system at Lindbergh Field by Wendt during a recent four-day period resulted in air leaks being reduced to a point that three instead of five compressors are needed.

"This will reduce utility costs by more than $5,000 annually," he said.

Employes also have been asked to take faulty blow-guns or other air-using devices to tool services for repair or replacement and to disconnect air hoses when they are not being used.

"Employes using compressed air equipment can help us achieve a considerable reduction in costs by prompt reporting of any leak — no matter how small," he said.

The utility discrepancy cards used for reporting air leaks also are designed for use in reporting water and steam leaks.



TAGGED—Judy Capps, Convair stenographer in facilities engineering, holds card which will identify leaks in air lines throughout plant. Employes are asked to report leaks to supervisors. "Blow-up" of card was used to call attention to program.

Test Set Designed For Checking Wiring on F-111 Pylon Assemblies

A test set designed and built in Convair's electrical test facility is helping Dept. 016, electric bench at Lindbergh Field plant, meet its schedule for furnishing wiring assemblies for F-111 armament pylons.

The F-111 pylon relay assembly test set, designed by W. S. Cronan, senior design engineer in the Bldg. 40 facility, checks out the assemblies' wiring to proof design and operation. If problems exist in the assembly, they can be easily detected and pinpointed by the light pattern on the set.

"The test tool, developed especially for this particular project, played a large part in meeting the tight schedules for the first pylon," R. E. Ratliff, Dept. 016 assistant foreman, said.

Without such a testing apparatus, each assembly would have to be put through a time-consuming manual check, Ratliff explained.

A second test set will be delivered this month and others may be ordered.

Designing and constructing such special test equipment for the factory is only one of the functions of the electrical test facility, adjoining the low speed wind tunnel at Lindbergh Field.

According to Cronan, the facility has a wide range of capabilities and equipment for testing and development of electrical systems. Cronan reports to S. R. Milis of Dept. 545-3 while the Bldg. 40 laboratory itself is the responsibility of R. K. Walter, staff specialist on assignment to Dept. 545-0.

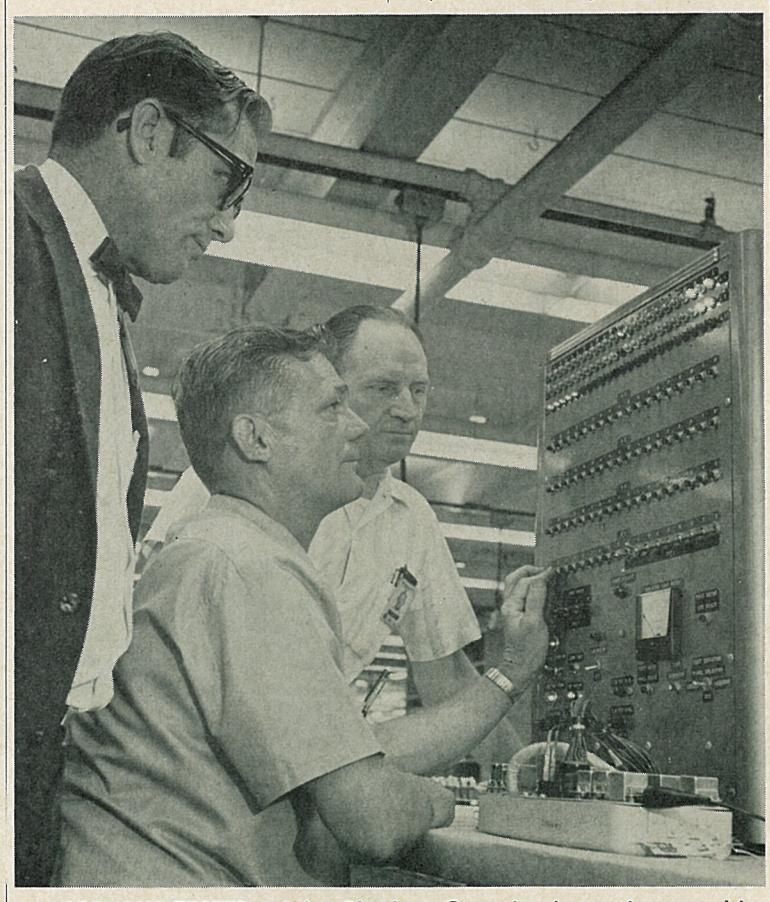
Other functions of the facility include research and development for electrical and electronic design groups. Design engineers also may use the test equipment in the development of electrical systems using aircraft-type power.

The facility does engineering-type inspection and acceptance testing of vendor supplied electrical assemblies.

It also gives support to receiving inspection on items such as AC and DC generators and high current relays.

Electrical system mockup and testing for practically all Convair aircraft was done in the facility and plans are made for similar work for future aircraft programs. Also, the facility has done engineering evaluation of aircraft electrical system components and has solved airplane electrical problems by duplication and testing of the system or circuit in the Bldg. 40 facility.

Any department or function wishing to take advantage of the electrical test facility's services may contact Cronan at LF ext. 579.

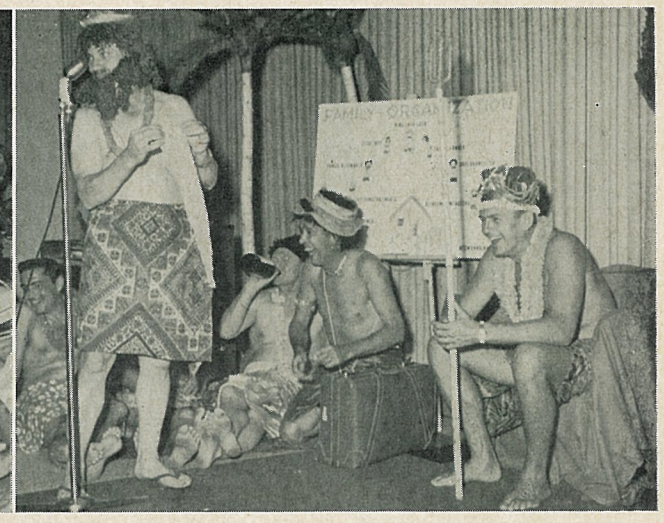


ASSEMBLY TESTER—John Rhodes, Convair electronic assembler in Dept. 016, checks out electronic relay box assembly for F-111 armament pylons on test set designed by W. S. Cronan, at left, of electrical test facility. At right is Jack Godwin-Austen, Dept. 016 mockup systems man, who helped build test set.

Walt Disney Film Scheduled on Sat.

Walt Disney's "Toby Tyler at the Circus," in color, will be shown at the CRA Clubhouse this Saturday, Oct. 21, at 1 p.m.

Open to all General Dynamics families, charge is 20c a person for both adults and children.



COCONUT CRISIS—Entertainment at recent Convair Vandenberg Management Club luau included reports on "coconut production problems" to King Lavalava (D. L. Fagan) by Trytoo Kuthatinhalfu (Frank McQueary) in left photo and Alfie Mixumtagetha (Pat Zoellner) in right photo. Also on stage are Curt Johnston, Ernie Millar and Tony Valdivia. Coconut dance was performed by Juanette Baysa, center photo. Luau guests consumed a 150-lb. roast pig.

Vandenberg Folk Enjoy Luau and Comic Skits

A total of 124 members, wives and guests attended a Convair Vandenberg Management Club-sponsored Hawaiian luau Sept. 23 in the Santa Maria Club in Santa Maria.

Highlighting the evening was a skit in which D. L. Fagan, Convair operations manager at Vandenberg, appeared as King Lavalava with members of his village "council" in an attempt to resolve coconut production problems.

Members of the council, each giving a five-minute report on why his department had failed, were Marvin Tooley as Reeli Layemoffa, Jack Cairns as Wewanna Inwritinga, Ernie Millar as Givvum Anneethingu, Frank McQueary as Trytoo Kuthatinhalfu, Val Wynn as Ubreakaweefixa, Curt Johnston as Fungu Alibimaker, and Pat Zoellner as Alfie Mixumtagetha. Tony Valdivia was Fannie Fanner.

Ten "human sacrifices" danced the hula while the king pondered his final decision—"to heck with the coconuts but let's have a luau every Friday"—which was promptly applauded by all his subjects.

Other entertainment was provided by a five-man Hawaiian band with Juanette Baysa performing authentic dances.

A 150-pound roast pig and special luau dishes were served with members and guests seated on pillows. A waterfall, tropical scenery and a flaming pond on the stage added to the atmosphere.

The luau was sponsored by Management Club members in Dept. 985-0 with arrangements and special program under the direction of Tony Estalio and Tom Galbos.

Flower Show Set For Oct. 29

Turkeys will go for best of show entries in CRA Garden Club's annual Fall Flower Show to be Oct. 29 in the Floral Association Bldg., Balboa Park.

All General Dynamics employes and their families, from all San Diego divisions, are eligible to enter.

Displays will highlight chrysanthemums, roses, arrangements, corsages, hanging baskets, potted plants, and children's entries. All flowers, except corsage and arrangement material, must be grown by the exhibitor.

Merchandise awards will go to all first through third place winners.

Entries will be accepted on the day of the show only from 7 to 11 a.m. Judging will start at 11 a.m. Doors will be thrown open to the public, free of charge, at 1 p.m.

Champions Crowned Following Finals Of Tennis Tourney

John Cannau, Rick Norwood, and Vince Marikle won men's singles events titles in the first round of the fall tennis tournament being sponsored by the CRA Tennis Club and Convair Management Club.

Cannau defeated Dennis Sealey, 6-1, 7-5, to win in the advanced division; Norwood (son of Cecil Norwood) edged Ed Pawka, 5-7, 6-1, 6-2, for the intermediate title, and Marikle (son of Ed Marikle) outplayed Bob Hintz in the finals for the win in the novice class.

The tournament is being played on Mesa College and Morley Field courts. Men's doubles and women's singles events were scheduled last weekend (Oct. 14-15) and mixed doubles will be competing next weekend (Oct. 21-22).

Sign For Tourney Before Next Thursday

Convair golfers may get starting times for the next CRA links tournament by calling CRA headquarters, ext. 1111 KM, beginning tomorrow, Oct. 19, through Oct. 26.

The tournament will be held Nov. 4 and 5 at the Coronado course.

Adventurers Head For Hills

"Adventure Under a Spread of Sail," a slide show photographed by Tom Leech of Convair's Dept. 986-2 last year during a 4½-week sailing adventure to Acapulco aboard a 38-foot ketch, will be featured at the CRA Adventurers meeting at 7:30 p.m. today in CRA Clubhouse auditorium.

The Adventurers are planning a combination one or two-day family outing Oct. 28 and 29 into the mountains southeast of Jacumba where Smugglers' Cave, the Henderson Mine and Hill's Cave are located.

Those making the trip will meet Oct. 28 at the Jacumba Cafe, leave at 9:45 a.m. for a drive over an old mining road to a primitive campsite, then hike about a mile across the border to Hill's Cave.

Dick Bowen, commissioner, is trip coordinator. Outing guides will be Roy Kepner, director of natural resources for San Diego County, and Roy Hampton of the Department of Agriculture.

Coineers Will Hear Talk on 'Variations'

Coineers will hear Pete Mitchell discuss "Varieties and Variations" at tonight's (Oct. 18) meeting in the Lindbergh Field cafeteria on Pacific Hwy. Meeting time is 8 p.m.

Raffle prizes will include a $5 gift certificate from J. Beaver's Coin Shop; 1861 silver three-cent piece, 1942P nickel, two 1942S and 1943S nickels, one 1944P nickel; two 1944S and 1945S nickels, one each of a 1947D, 1950D, 1951S, 1952D, 1953D, 1954D, 1957D 50-cent piece.

A give-away coin will be given all present. Everyone attending is urged to bring an exhibit and a friend.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Oct. 25. Call ext. 1071 LF or 3322 KM.)

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ADVENTURERS—Slide showing tonight, Oct. 18, 7:30 p.m., CRA auditorium. Family outing Oct. 28-29 to mountains near Jacumba.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park.

BASKETBALL—Managers meeting Oct. 19, 7 p.m., CRA Clubhouse, Room A.

BICYCLE CLUB—50-mile ride to Otay Mesa Saturday, Oct. 21. Start at 7:30 a.m. from Jamacha and Sweetwater Roads, Spring Valley. Short rides each Sunday, 2 p.m., from CRA Clubhouse.

BOWLING—Sign by Oct. 27 for IRC tournament Nov. 4-5, Pacific Rec. Get entry forms from Mike Brooks, ext. 2916 KM; Forest Erwin, ext. 3213 KM; or Jim Hayman, ext. 581 LF.

BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

COINEERS—Meeting tonight, Oct. 18, 8 p.m., Lindbergh Field cafeteria. Speaker.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Meeting and corsage instructions Nov. 1, 7:30 p.m., Floral Association Bldg., Balboa Park. Fall Flower Show Oct. 29.

GOLF—Sign until Oct. 26 for CRA tourney, Nov. 4-5, Coronado course. Call ext. 1111 KM.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Mondays through Fridays; 10 a.m. to 5 p.m., Saturdays. Call ext. 1111 KM.

ICE SKATING—Skating sessions for General Dynamics people Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

JUNIOR SCIENCE—Meeting Oct. 20, 7:30 p.m., CRA Clubhouse.

PISTOL CLUB—Shoot Oct. 22, 9:15 a.m., SD Police Pistol Range.

RADIO CLUB—Meeting tomorrow, Oct. 19, 7:30 p.m., CRA Clubhouse.

RIFLE CLUB—Senior shoot Oct. 25, 7:30 p.m. Junior shoot Saturday, Oct. 21, Gillespie Field Range.

ROCKHOUNDS—Field trip to Rainbow Ridge Oct. 21. For information call G. M. Halterman, 444-5943.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SQUARE DANCING—Dynamic Eights dance each Thursday, 8-10 p.m., CRA Clubhouse.

STAMP CLUB—Meeting Oct. 26, 7:30 p.m., CRA Clubhouse.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TRAILERS—Road Runners meet Oct. 26, 7:30 p.m., Gillespie Field Clubhouse.

WIVES—Luncheon today, Oct. 18, at Harbor House. Potluck and craft session Oct. 25, CRA Clubhouse. Los Angeles trip Nov. 1. Call Flora Loftin, 276-4270, or Helen Ohland, 442-5714.

'Mickey Mouse Golf' Slated for Oct. 28

Convair Management Club's eighth annual "Mickey Mouse" golf tournament will be held Oct. 28 at Singing Hills.

Players are instructed to call Helen Cook, KM ext. 3146, for starting times.

A $6 entry fee covers greens fee, free beer and many prizes. No handicaps are required for the blind bogey. Guests as well as members may enter. Entry deadline is Oct. 21.

Basketball Loops To Organize Oct. 19

CRA basketball leagues will be organized at a managers' meeting tomorrow evening, Oct. 19, 7 p.m., in the CRA Clubhouse, Room A.

All slow and fast break team managers are urged to attend.

Pete Beyrer of CRA said that practice courts may be obtained by calling Muni Gym, 239-4421.

League games will start on Dec. 6.

They're Good, Too!

Gridders Spend Leisure Time Sparking Minor League Team

Five Convair players spend three evenings a week and most of their Sundays as the mainstay of a minor league football team's offense which is mowing down competition in its first season as an incorporated ball club.

They are: John Glover, Dept. 250-3; Garfield Winters, Dept. 250-5; Charles Johnson, Dept. 170-8; Mike Veron and Ken Patterson, both Dept. 005-0, all at Lindbergh Field plant.

They are all first-string players on the North County Tornadoes which started out five years ago as the South Bay Athletic Club. Now, sparked by Glover as offensive coach, the Tornadoes are blowing down such teams as Long Beach (27-8), El Toros (38-0), and drawing crowds up to 8,000.

In fact, says Glover, the Tornadoes schedule all their games out of the immediate San Diego area so they won't detract from the Chargers' box office!

Glover, a plumber in Convair maintenance, has been playing and coaching football for 16 years in Texas, at East Los Angeles Junior College and in the Marine Corps. He played line before he took up coaching duties for the Tornadoes.

Winters works in Convair transportation. He started playing football at River Rouge High in Michigan and then played with the semi pro Detroit Eagles. He now plays safety for the Tornadoes.

Johnson plays end and had five years' playing experience with Kearny High and City College. He works in the Convair mailroom, driving one of the trucks between plants.

Veron and Patterson are on the Convair landing mats line. Veron, a Tornado guard, played on the University of Alabama varsity. Patterson, offensive tackle, played with San Miguel High and Grossmont Junior College first teams. Incidentally, he brought the crowd at the El Toros game to their feet when he ran the ball 25 yards for a touchdown.

The Tornadoes have 45 players on their defensive and offensive teams and range as far afield as the San Fernando Valley for their Sunday games. This season they play 16 league games and plan to go to Las Vegas for a game there next month and to Mexico City to play the All Stars of the university there before Christmas.

Convair Wives Plan Day of Sightseeing

Convair Wives will spend a day sightseeing in Los Angeles on Wednesday, Nov. 1.

The chartered bus will leave the CRA Clubhouse at 7 a.m. sharp. A stop will be made at the nuclear generation station near San Onofre. In Los Angeles the group will see the Greek Cathedral, have lunch at the Jolly Roger, visit Busch Gardens, Olvera Street, and have dinner at La Golondrina before starting the trip home. They expect to be back at the Clubhouse by 9:30 p.m.

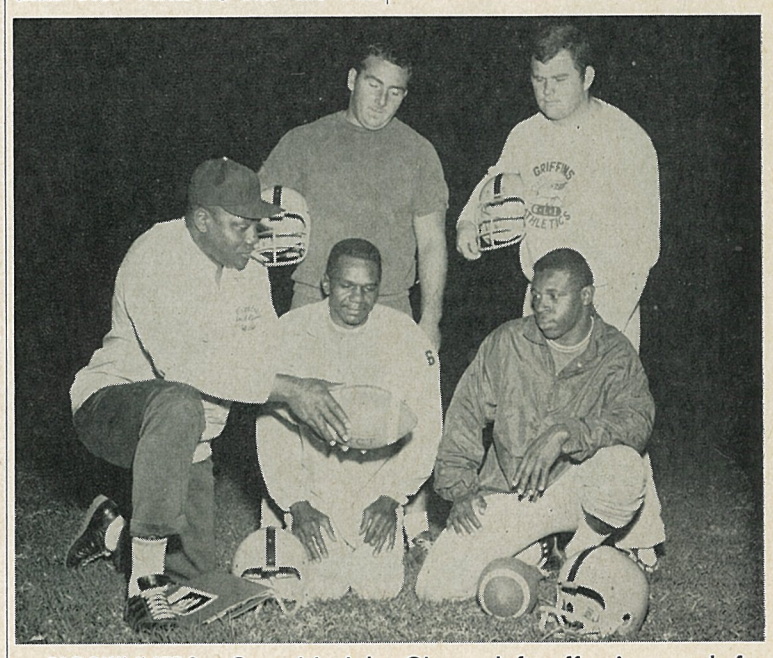
The trip will cost $4 per person. Helen Ohland, 181 Minnesota Ave., El Cajon, is accepting reservations by today, Oct. 18. For information call Flora Loftin, 276-4270, or Mrs. Ohland, 442-5714.

Deadline Oct. 27 For Keg Tourney Entries

Deadline for General Dynamics men's and mixed bowling teams to enter the annual Industrial Recreation Council tournament is Oct. 27.

The tournament is scheduled Nov. 4 and 5 at Pacific Recreation, 3681 Couts St. Convair teams have been participating in the tournament for the past 15 years.

Entry forms may be obtained from Mike Brooks, ext. 2916 KM; Forest Erwin, ext. 3213 KM; or Jim Hayman, ext. 581 LF.



PIGSKINNERS—Convair's John Glover, left, offensive coach for minor league Tornadoes, gives a few tips to players, (kneeling), Garfield Winters and Charles Johnson, (standing) Mike Veron and Ken Patterson, all from Convair.

Nerve System of an Airplane: A report from General Dynamics

Next time you take a trip in your car, try to drive there without steering wheel, accelerator or brakes.

Impossible, of course. They are vital to the job. Without them, the car won't do what it must, even though the chassis, body, motor, power train, tires, fuel, driver—and passengers—are all there.

The function of any vehicle is to deliver something from one place to another. The family car is a passenger-delivering system. A military aircraft is a weapons-delivering system. Avionics are vital to that job.

Extending human will:

In a modern military aircraft, the human crew is the intellect and the will. Avionics—or what used to be called aviation-electronics—are its nervous system, extending the human will through machines for tasks that require accurate control, sustained precise effort, or ultra-fast computation.

Here are some of the things current avionics do:

- Provide exact and unjammable navigation.
- Help the crew fly smoothly and safely, so low that detection and tracking capability of enemy radar will be sharply reduced, or so high and fast that it can circumvent other forms of attack.
- Assist the easy transition from one flight regime to another.
- Detect potential sources of attack from air or ground.
- Help fire any combination of weaponry with precision.

The F-111 fighter-bomber being built by General Dynamics is a case in point.

The F-111's variable-sweep wing, which makes it possible to redesign the aircraft *in flight,* is one of the great aerodynamic advances.

This airplane can fly fast or slow; 12 miles high or skimming the treetops; drift through the air for hours, or attack at two and a half times the speed of sound; ferry itself across an ocean without refueling, and land or take off from rough tactical fields in short distances.

All in all, it is the most versatile aircraft ever designed.

But first and foremost it is a weapons-delivery system. Its avionics, much more sophisticated than those of earlier airplanes, are a good indication of what is required nowadays.

A generation ago, aviation-electronics consisted mainly of radio. Today's avionics include a large assortment of separate systems which are segments of a larger fully integrated electronic system. This, in turn, is integrated with the airframe, the engines and weaponry.

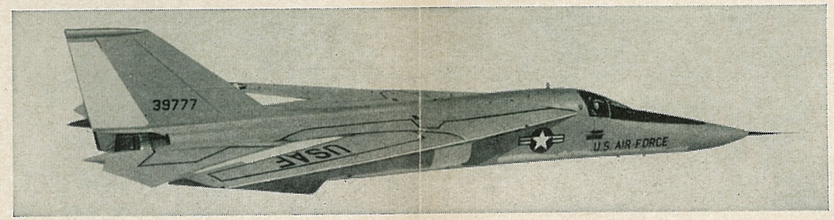
To see how it ties together, look at a few of the F-111's avionics parts.

The triply redundant, self-adaptive flight-control system relates directly to the unique ability of the F-111 to vary the way it flies.

A complex of electronic sensors and computers measures motions of the aircraft and commands, through hydraulic and mechanical components, any necessary compensation to control surfaces.

In case of sudden change in atmospheric conditions (i.e., clear air turbulence or strong gusts), or rapid shift in altitude or direction, the self-adaptive flight-control system will automatically make any necessary adjustments for pitch, roll or yaw—often before pilots even know they are needed.

When wings change position, changes in other control surfaces take place simultaneously. The plane never loses its desirable flying qualities at any speed, or change in speed, from takeoff through Mach 2.5.



An inertial navigation system eliminates the uncertainties inherent in earlier magnetic-compass, radio or radar navigation techniques.

The inertial system measures every inch of passage, fluctuation in direction or change in speed. At any given moment, the pilot knows precisely where he is in relation to his takeoff point, his target and his return base.

"Hideability":

Terrain-following radar (TFR) improves mission efficiency.

A fast low-flying airplane which can be "seen" only fleetingly is troublesome for ground search radar. For maximum "hideability," the aircraft's terrain-following radar can be set at an optimum clearance close to the ground. The plane can now dip into the valleys and skim the peaks at supersonic speed in any weather, day or night. It can keep on a direct path, yet make the enemy's problem of detection far more difficult.

The TFR constantly looks both down and ahead, and relays its information to the self-adaptive control system. The complex adjusts the entire aircraft far faster than could unassisted human reflexes. Even over particularly jagged territory, the ride is relatively smooth.

The pilot can fly through zero visibility, protected against physical obstructions ahead. Should any of the TFR's circuits fail, the overall avionic system is programmed to put the aircraft automatically into a very sharp climb to higher altitude.

The ultimate function of the F-111, however, is the delivery of weapons—a mix of many types, long and short-range, for defense and attack, with different methods of firing. This calls for three closely related systems.

Finding a target:

A bomb/navigation system, connected to every weapon, constantly measures the plane's speed, altitude, attitude and position. These are computed against information, already stored, on the particular drop or firing pattern of each weapon and the location of the target.

A "head-up" system projects flight and other data, in color bar form, to a transparent reflective plate at pilot's eye level. Through it, he can see all the information necessary to fire guns and missiles without moving his eyes from the target itself.

To extend his sight in bad weather or at night, *high resolution ground mapping radar* provides a clear picture of the terrain or of airborne targets, simultaneously reporting the changing range between plane and target.

With these reinforcing the pilot's judgment, the specific weapon needed can be released, manually or automatically, at the split second when it is most likely to hit its target exactly.

Each of the "separate" systems has a distinct job, yet all are, to some degree, interdependent. For maximum reliability, self-test devices check, before and all during flight, for any malfunction. Should one occur, the "work" can be shifted quickly to back-up equipment—and assure that the mission will not be impaired.

Even though the current avionic systems are advanced over anything that has gone before, newer and improved versions are already being jointly developed by General Dynamics and its many subcontractors who produce the individual systems that make up the whole.

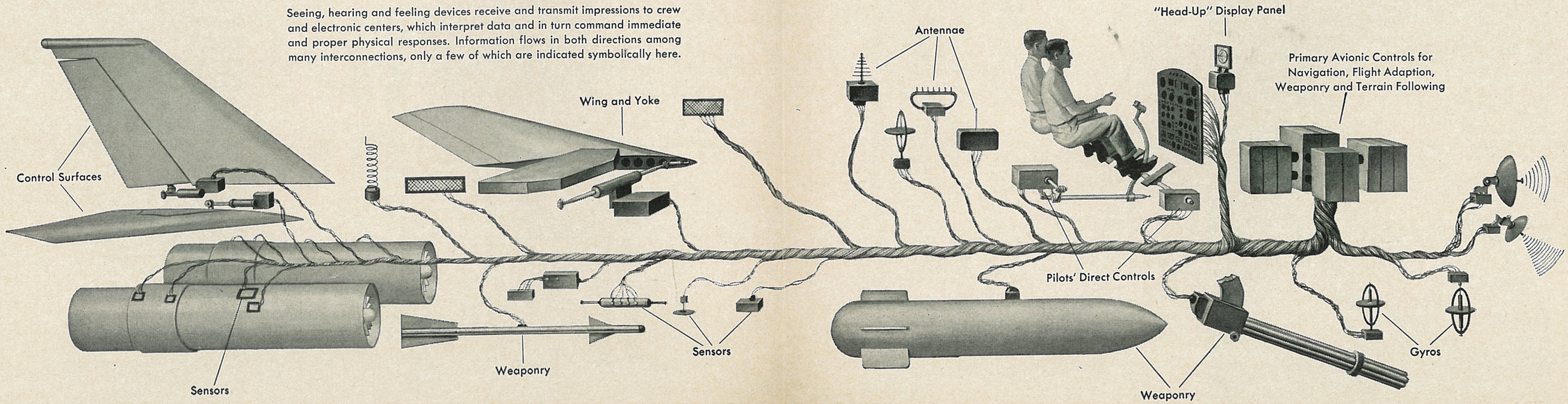
General Dynamics is a company of scientists, engineers and skilled workers whose interests cover every major field of technology, and who produce: aircraft; marine, space and missile systems; tactical support equipment; nuclear, electronic, and communications systems; machinery; building supplies; coal, gases.

Reprints of this series are available.

GENERAL DYNAMICS

One Rockefeller Plaza, New York, New York 10020

Seeing, hearing and feeling devices receive and transmit impressions to crew and electronic centers, which interpret data and in turn command immediate and proper physical responses. Information flows in both directions among many interconnections, only a few of which are indicated symbolically here.



SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 22 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, November 1, 1967

TOUR TRAVELERS—General Dynamics families who recently returned from 22-day CRA European holiday tour are shown before boarding plane Sept. 30. Group toured 11 European countries by motor coach after flight to Copenhagen.

Briefings Scheduled On Convair Products

A series of presentations on some of Convair division's major present and proposed product lines will be presented for all interested employes at Kearny Mesa and Lindbergh Field beginning next week.

The presentations will be given from 4:45 to 5:45 p.m. Mondays in the cafeteria on Kearny Mesa and from 4:30 to 5:30 p.m. Thursdays in the Bldg. 5 engineering auditorium at Lindbergh Field.

Following is the schedule:

Nov. 6 and 9—VSX and AX aircraft.

Nov. 13 and 16—Atlas, Centaur and Advanced ICBM.

Nov. 27 and 30—Maneuverable spacecraft, reusable launch vehicles and manned space vehicles.

Dec. 4 and 7—Range Measurement System-2, Orbital Vehicle One satellites, Centralized Mission Control and Monitor Display Complex (CENTCON), earthquake devices and swimmer delivery vehicles.

Program managers or program office representatives from each represented area will speak. Donn Olsen of educational services is coordinator for the series.

Roger Lewis Reports Net Sales Advance

For the nine months ended Sept. 30, 1967, net sales of General Dynamics Corporation and subsidiaries were $1,568,252,000, Roger Lewis, president, announced. This compares with $1,259,333,000 in the first nine months of the preceding year.

Net income for the first nine months available for common share owners amounted to $41,572,000, equivalent to $3.99 per common share. This compares with $36,155,000, equivalent to $3.51 per common share, in the first nine months of 1966.

In both years there were substantial non-recurring gains on the disposition of securities. After applicable capital gain taxes, these came to $5,274,000 and $3,624,000 in the respective first nine months of 1967 and 1966.

Per share common stock net income from operations, excluding the non-recurring gains, was $3.48 through Sept., 1967, versus $3.16 in the equivalent 1966 period.

Directors of General Dynamics declared a regular quarterly dividend of 25 cents per common share, payable Dec. 11, 1967, to holders of record Nov. 10, 1967.

Electronics-SD Singles Out Seven For Their High Quality Work

Seven Electronics-SD people, five men and two women, won Craftsmanship awards for their high quality work during the first six months of this year.

In an awards ceremony Oct. 18, General Manager Don C. Prim honored J. R. Austin, Lee Feyerherm, W. C. Kilmer, R. V. Lipps, Ann O'Dey, Otis Robertson, and Jack Webb.

Austin, a publication editor in technical publications, was chosen for his ability to prepare high quality flip charts, Vu-graphs, and brochures for presentation to top management, on time, even

(Continued on Page 2)

CRAFTSMEN—Electronics-SD individuals chosen for Craftsman awards for six-month period are, from left, Jack Webb, Ann O'Dey, Otis Robertson, Lee Feyerherm, W. C. Kilmer, R. V. Lipps, J. R. Austin.

FABRICATION DEPT. AT ELECTRONICS-SD AWARDED ZD HONOR

Fabrication department of Electronics-SD garnered Zero Defects honors for the third quarter of the year as it topped all other departments in error-free work for the second time. It won its first Zero Defects award the second quarter of last year.

The selection was based largely on the department's performance on the GRC-142 program under which the shop fabricated housings for mobile communications shelters being built for the Army's Signal Corps by Electronics-Rochester, prime contractor.

While the work load on the program increased 4.5 per cent, discrepancies were reduced 43.3 per cent over the previous quarter.

Don C. Prim, Electronics-SD general manager, in presenting the Zero Defects banner Oct. 17, praised the shop's performance, "Reduction of defects over the last three months would, in itself, justify the award, but coupled with the adverse conditions under which this work has been performed, winning the award is doubly significant."

He went on to say that the fabrication department had been under tremendous pressure in meeting the tight delivery schedule to support the Rochester operation's needs. A short-term peak of work, new untrained workers, three shifts and a variety of production work were

(Continued on Page 2)

Countdowns Near At Cape

Convair personnel are awaiting countdowns for two major NASA space program launches from the Eastern Test Range in which Convair-built launch vehicles will be used.

Atlas-Centaur 14 will send Surveyor 6 to the moon from Complex 36-B.

Atlas SLV-3 No. 5103 and an Agena second stage vehicle will

(Continued on Page 2)

Convair Builds Plane Fuselage For FAA 'Crash'

A model airplane fuselage, built at Convair, is getting ready to "fly" and crash land this week in a series of tests by the Federal Aviation Administration to learn how the structure can be improved to protect passengers' lives.

The fuselage was designed by Convair structures engineers under Tom Heid, Convair program leader, and built in Convair experimental factory. It is the first of four ordered by the FAA in the second phase of that agency's continuing crashworthiness program which will extend into the early part of 1968.

The completed fuselage is 30 ft. long and four ft. in diameter and represents typical aircraft construction with frame, stringers, and skins. It left Convair Oct. 17 for the National Aviation Facilities Experimental Center at Atlantic City, N.J., where testing was to start this week. It will

(Continued on Page 2)

SECOND-TIME WINNER—Electronics fabrication at San Diego operation wins Zero Defects honors for second time in presentation ceremony last month. General Manager Don Prim awarded banner and praised department.

'Crime, Public Apathy' Mgt. Club Subject

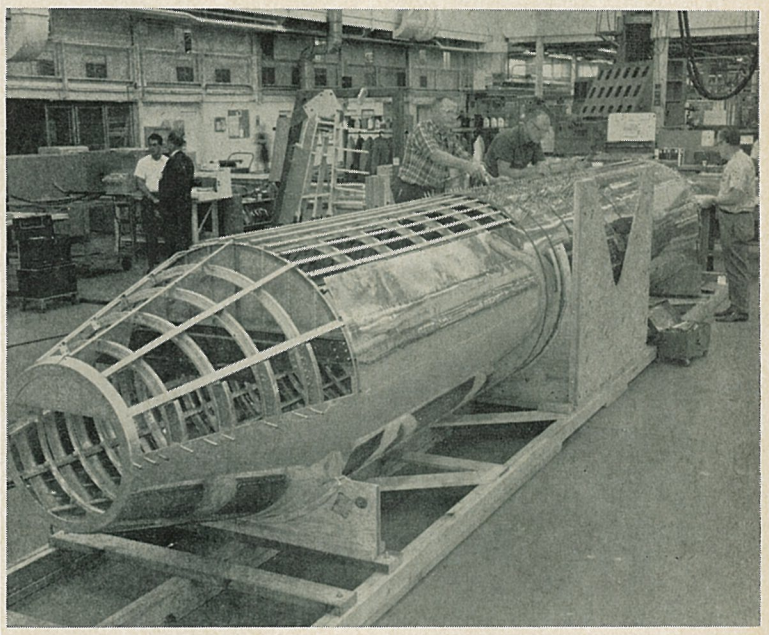
"Crime and Public Apathy" will be the topic of the main speaker at Convair Management Club's meeting Nov. 15 in El Cortez Hotel.

Lt. William B. Kolender of the San Diego City Police Department will discuss juvenile delinquency, narcotics, and other crime problems.

Wives are encouraged to attend, Ad Mosco, club president, said. Social hour will begin at 5:30 p.m., dinner at 6:30, and program at 7:30.

Tickets are on sale by Boosters at all plant locations.

The meeting is sponsored by contracts department.



HEADED FOR CRASH—Model fuselage at Convair for Federal Aviation Agency's crashworthiness studies will "crash" into slope simulating a typical survival crash impact. In photo, taken during construction in Convair experimental, are (in background) Tomas Castro, leadman, and Gene Theroby, liaison planner; John Burgreen, John Nonzeta, and Walter Butcher, assemblers, riveting skins on structure.

Electronics-SD Singles Out Seven For Their High Quality Work

(Continued from Page 1)
when under heavy schedule pressure.

Mrs. Feyerherm, secretary in contracts, was selected because of her error-free performance while under the pressures and tight schedule of the contracts department.

Kilmer's selection was based on his exceptional ability to develop test set-ups and procedures for acceptance testing of suppliers' hardware. Kilmer is a set-up man in the receiving inspection area of quality control department.

Lipps, a research and engineering technician in the advanced development lab, was nominated for his excellent technical knowledge of high frequency circuits, his ability to do original thinking on problem solving of the circuits, and his ability to maintain excellent workmanship standards.

Miss O'Dey was nominated by her supervisor for her efficiency in carrying out her multiple responsibilities as a traffic clerk in manufacturing services while maintaining high volume and error-free performance. Among her duties is the preparation of Export Declarations Forms for the U. S. Customs Service.

Robertson, a proposal coordinator in marketing, was selected because of his ability to review, coordinate, and schedule RFPs, PPDs, and RFEs in a thorough and timely manner.

Webb, configuration control specialist in mechanical design, was chosen for his efficiency, cost consciousness, and ability to develop new techniques while maintaining high quality in the drawing release group.

Each received a desk pen set and award certificate. The award winners and their supervisors were guests at a luncheon at Kona Kai.

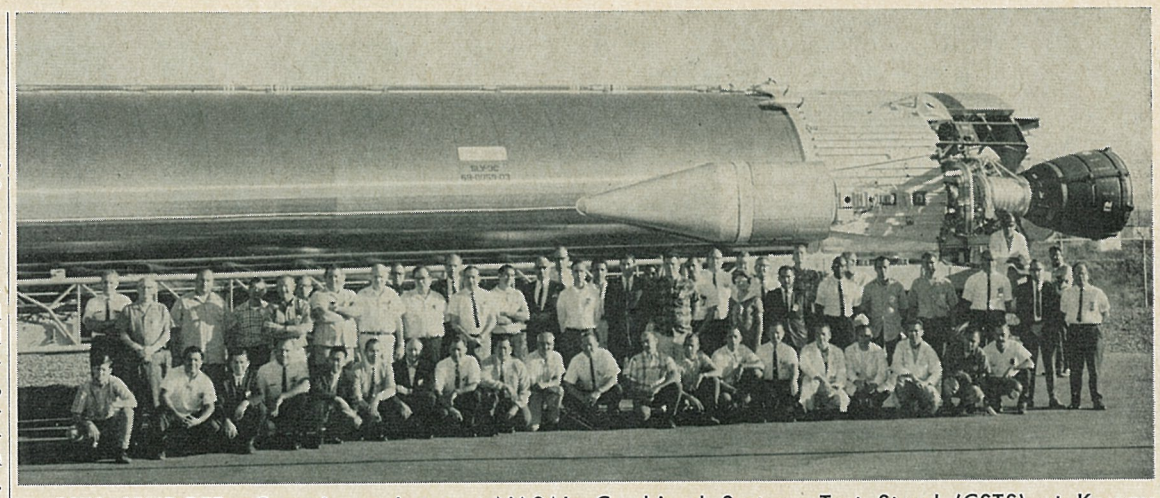
FABRICATION DEPT. AWARDED ZD HONOR

(Continued from Page 1)
some of the major difficulties overcome by the fabrication department during the three-month period.

The fabrication shop consists of 69 employes, two of them women, under the overall direction of John Murray as general foreman. J. O. Tollette and J. A. Riley are foremen on first shift and W. A. Martin Jr., second shift foreman. Quality control is under the supervision of J. W. Barrett.

Cigars and candy were passed out at the presentation.

Members of the Zero Defects committee are R. H. Nicholson, manager of quality control, chairman; R. D. Brant from quality assurance; Juan Green, engineering; Jack Larson, marketing; K. C. Schaefer, operations; and Otto Barksdale, estimating.



CSTS SENDOFF—Convair employes at NASA's Combined Systems Test Stand (CSTS) at Kearny Mesa plant give sendoff to Atlas SLV-3C No. 5903, booster for Atlas-Centaur 15 flight to send Surveyor 7 to moon. AC-15 vehicles were last currently scheduled for combined systems test at facility.

Countdowns Awaited at Cape; AC-14 Will Launch Surveyor 6

(Continued from Page 1)
launch Applications Technology Satellite-C from Complex 12 into near-synchronous equatorial orbit.

★ ★ ★

Convair's Atlas SLV-3C No. 5903 and Centaur 12D, vehicles for the Atlas-Centaur 15 mission to send the seventh and final Surveyor spacecraft to the moon, have been airlifted to the Eastern Test Range after completion of tests at NASA's Combined Systems Test Stand (CSTS) at Kearny Mesa.

Surveyor 7 is scheduled for launch early next year from Complex 36-A at Cape Kennedy.

The AC-15 vehicles were the last currently scheduled for combined systems tests at CSTS.

Future electrical system compatibility tests for Atlas-Centaur are to be conducted in the Kearny Mesa factory.

G. G. Christ, test conductor, said tests for the AC-15 vehicles were "the best ever."

Mgt. Club Donates $100 to Boys Clubs

Convair Management Club has contributed $100 to the San Diego YMCA to assist in support of "Y" Community Clubs for 8th and 9th grade boys in 13 junior high schools.

T. W. Ochodnicky, club community activities manager, said each of the Community Clubs have weekly business meetings and athletic workouts, inter-club sports competition in season, a monthly social activity.

Lt. Col. Garrison New Deputy Chief

Lt. Col. Joseph B. Garrison, USAF, has assumed duties as deputy chief of the Defense Contract Administration Services Plant Representative Office at Convair. He succeeds Lt. Col. G. D. Fairbanks who has retired.

Lt. Col. Garrison

Before coming to his new post Colonel Garrison was assigned to the Ballistic Systems Division, Norton AFB, for two years. During this period he was located at the AFPRO, Boeing Co., Seattle, Wash., as chief of the Minuteman ICBM Production Board.

A veteran of 26 years, Colonel Garrison has held many responsible assignments in the missile and rocket fields. During World War II he served in the Asiatic/Pacific Theater, and from 1952-55 was on assignment in Germany.

Convair Fuselage Set For FAA 'Crash'

(Continued from Page 1)
be placed on a cart which will be braked to a dead stop in four feet, catapulting the fuselage into free flight at 75 mph into a six degree slope. The impact simulates a typical survivable crash impact.

Results will evaluate the fuselage for crashworthiness. In addition, the test will give the FAA a chance to check out a computer program developed at Convair during the first phase of the program to evaluate design concepts. The program, written by Jack Weber of Convair dynamics group, predicts aircraft response at impact. The present test will compare the program predictions with what actually happens during the "crash landing."

The remaining fuselages will be designed with improved crashworthy features and used in later tests. The second fuselage is to be completed and shipped early this month.

When telephoning, never mind the weather. Get to the point. Telephone time costs money.

Convair Tries 'Train Our Own' System With Tool Designers

Thirteen Convair men last week completed a course in tool design to form the nucleus of a pool to supply potential needs of the tool design department.

The tool design training course, first for several years to be held in-plant, was initiated to fill the increasing demand for tool designers.

Out of the 60 applicants screened for the course, 16 were accepted. Of these, 13 finished the entire 160 hours of training.

The course was taught by Bob Came, Convair tooling engineer, who conducted a City College credit course in the same subject on his own time a couple of years ago. Hal Rubin and Wayne Turner of educational services coordinated the present course.

Applicants are selected mainly from tooling and machine shop on the recommendation of their supervisors. Choice of students is on the basis of their aptitude and minimum requirements of adequate shop experience, knowledge of mathematics through trigonometry, and at least two semesters of drafting.

In the classes, which ran 8 hours a day for four weeks in the Lindbergh Field training area, students worked practically the entire time at the drafting board. Their exercises were actual jobs which have been released or are now in work. And, they worked from the same instructions that tool design uses — tool orders, tool planning, and blueprints. Their assignments became progressively more difficult throughout the course.

According to Came, the class responded very well to the training.

Another course will start the first of next week.

Completing the initial course were:

Louis A. Bramante, William M. Breheny, Stanley Budz Jr., Floyd Costner, Robert Disciscio, H. C. Guenther, Peter Kinney, Robert Padilla, Leonard Petrucelli, Thomas A. Rapue, Daniel Rhoades, Aaron Roberts, Bryan E. Shamblin.

TOOL DESIGN CLASS—Bob Came, Convair tooling engineer, answers questions of Leonard Petrucelli at drafting board in Convair tool design course which graduated 13 end of last week. Observing are Hal Rubin and Wayne Turner of educational services.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Oct. 15 and Oct. 31.

Thirty-year: Dept. 001, R. D. Gowdy; 031, R. H. Kenner; 140, P. M. Benner; 511, G. W. O'Hare.

Twenty-five-year: Dept. 001, D. Selvaggi; 250, R. R. Aiken; 510, W. H. Schaefer; 832, H. C. McCullough; 840, Anna S. Schoolcraft, J. G. Sheldon; 964, J. H. Overdeer.

Twenty-year: Dept. 001, A. I. Harger; 027, R. M. Bolton; 195, R. C. Maving Jr., G. W. Stockdale; 250, E. W. Groth, H. H. Walters; 403, D. C. Basore; 566, G. D. Simmons; 715, J. C. Morales; 950, G. J. Vila; 964, C. E. Fabian.

Fifteen-year: Dept. 019, R. F. Lanzo; 113, J. E. Foster; 300, L. R. Imbimbo; 401, F. W. Patterson; 420, H. E. Ruby; 508, Marie G. Murphy; 515, G. N. Tyler; 566, C. W. Marsh; 717, J. P. Gage; 731, R. H. Harter, J. E. Parent; 733, A. H. Angulo; 780, Marie M. Rivard; 810, N. McCree; 835, C. D. Allenson Jr., O. G. Daviau; 953, L. Rodrigues Jr.; 957, F. E. Hinton Jr.; 985, E. J. Walty.

Ten-year: Dept. 015, J. W. Boland; 101, Mary E. Nolan; 130, H. Williams; 194, C. J. Marsden; 195, L. E. Carlson; 401, J. Levine; 574, Mary A. Adam; 595, A. J. Van Den Akker; 780, Opal H. Faire, Helen M. Gibbons, W. P. Southwell; 820, Barbara J. Freeman; 985, R. I. Smith.

ELECTRONICS

Fifteen-year: Dept. 103, Helen G. Drake; 921, D. C. Ruzich.

Ten-year: Dept. 812, J. Boelens, F. W. Shaw.

STROMBERG-CARLSON

Ten-year: Dept. 84, H. L. Main.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Oct. 13.

Dept. 001-0, D. Fischer, J. Hammer, Matt Preite, P. K. Walsh; 002-0, C. O. Owens; 015-0, B. H. Davis (two awards), J. R. Laccabue Sr. (two awards); 130-1, G. C. Brown; 130-6, B. J. Hicks; 142-1, D. E. Palmer; 144-1, M. L. Jamison, W. G. Lux, E. H. Smith; 144-2, E. McLeod; 194-0, D. H. Leonard, F. S. Mascari; 400-6, D. B. Tucker; 507-0, E. V. Marikle Jr.; 524-5, Gina Jappchen; 732-0, L. A. Gooseman, L. E. Rossi Jr.; 761-0, L. M. Hernandez; 763-0, R. L. Brown; 780-2, H. L. Hampton; 832-3, L. B. Wray; 840-3, J. D. Barbieux, M. F. Gonzales; 957-0, F. L. Estevane, C. L. Parker; 961-0, L. L. Ripley; 979-1, R. J. Brackett; 985-4, G. Mees.

EASTERN TEST RANGE

Dept. 979-3, A. C. Davis, R. F. Noe.

Employe Suggestion awards approved for week ending Oct. 20.

Dept. 001-0, D. Arena, M. Preite; 005-0, G. R. Potter; 015-0, A. W. Beckman, A. Reiter; 019-0, R. F. Lanzo, F. Malcangio; 020-0, R. C. Beezley; 031-0, V. H. Schade; 041-0, J. L. Killeaney; 131-4, F. M. Morris; 143-1, J. B. Miller, J. J. Murphy; 144-1, H. H. Mishler; 144-2, G. T. Lizon, R. F. Luth; 149-7, C. A. Keeth; 170-1, L. R. Reardon; 250-1, H. W. Schleibaum; 250-2, J. T. Dragonetti; 401-5, J. H. Elms; 518-0, G. C. Gonzalez, S. M. Withers; 572-1, D. T. Farrelly; 578-1, H. G. Brittain; 717-0, R. M. Cech, C. R. Fennell; 733-0, R. V. Alexander; 761-0, M. L. Hawks, L. Spurgeon; 780-2, C. G. Collins; 831-1, J. D. Rogers; 840-0, S. E. Leverett; 957-0, R. R. Reekers; 979-1, V. H. Duduit, C. E. Ray; 979-3, W. C. Mitchell; 979-4, J. E. Garrett; 985-4, W. J. Clark.

EASTERN TEST RANGE

Dept. 979-2, W. B. Sullivan.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff. Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Mondays, Nov. 6 and 20. Lindbergh Field, ext. 491, Bldg. 14 auditorium, first shift, 8 a.m., Tuesdays, Nov. 14 and 28; second shift, 4:30 p.m., Tuesday, Nov. 7. AF Plant 19, ext. 491 LF, Bldg. 3, 1st mezz. Col B-14 conference room 8 a.m., Thursday, Nov. 16.

PROFESSIONAL/TECHNICAL

DAMAGE PREVENTION—Lindbergh Field, first shift, Wednesdays and Thursdays, 8-9 and 10-11 a.m., Nov. 1, 2, 8, 9, 15, 16, Bldg. 14 auditorium. For information call W. F. Weidenfeller, ext. 1931 KM.

FORTRAN IV—Lindbergh Field, Mondays and Wednesdays, 4-6 p.m. Starts Nov. 6. For information and reservations call Dick Forrest, ext. 1931 KM before Nov. 3.

PROGRAMMED SELF STUDY—A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Educational services office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Rider-Driver

RIDE WANTED—From Lindbergh Field to 30th & Adams. 1:00 a.m. Phone Hazel Knight, ext. 1300 LF.

RIDE WANTED—From La Jolla or Pacific Beach to Kearny Mesa, 4:30 p.m. to 1 a.m. shift. Phone Grace Cline, ext. 1311 LF or (home) 454-0627.

RIDE WANTED—Corner of Utah and Adams to Kearny Mesa plant, 7:30-4:15 p.m. shift. Phone June Casey, ext. 801 KM, or home 284-9831.

Personals

CONVAIR

We wish to express our thanks for your thoughtfulness at the death of our wife and mother.

Russ Osgood, Dept. 860-0 and sons, Bill and Bob.

* * *

We wish to thank you for the beautiful flowers sent to the funeral of our father, Asherry Smith (retired).

The Smith Family.

Lost & Found

CONVAIR

LOST—Gold bee tie tac with brown star sapphire stone last Oct. 17 at Kearny Mesa; sentimental value. Reward. Phone Elynor Keefer, ext. 2918 KM.

Births

CONVAIR

MYERS—Daughter, Sabina Lee, 6 lbs. 13 oz., born Oct. 19 to Mr. and Mrs. James Myers, Dept. 027.

Deaths

CONVAIR

BOYLE—C. T., Dept. 420-1. Died Oct. 13 while on weekend trip to Salton Sea. Survivors include his wife, Norraine; a daughter, Connie Jean, and a son, Thomas.

General Dynamics News

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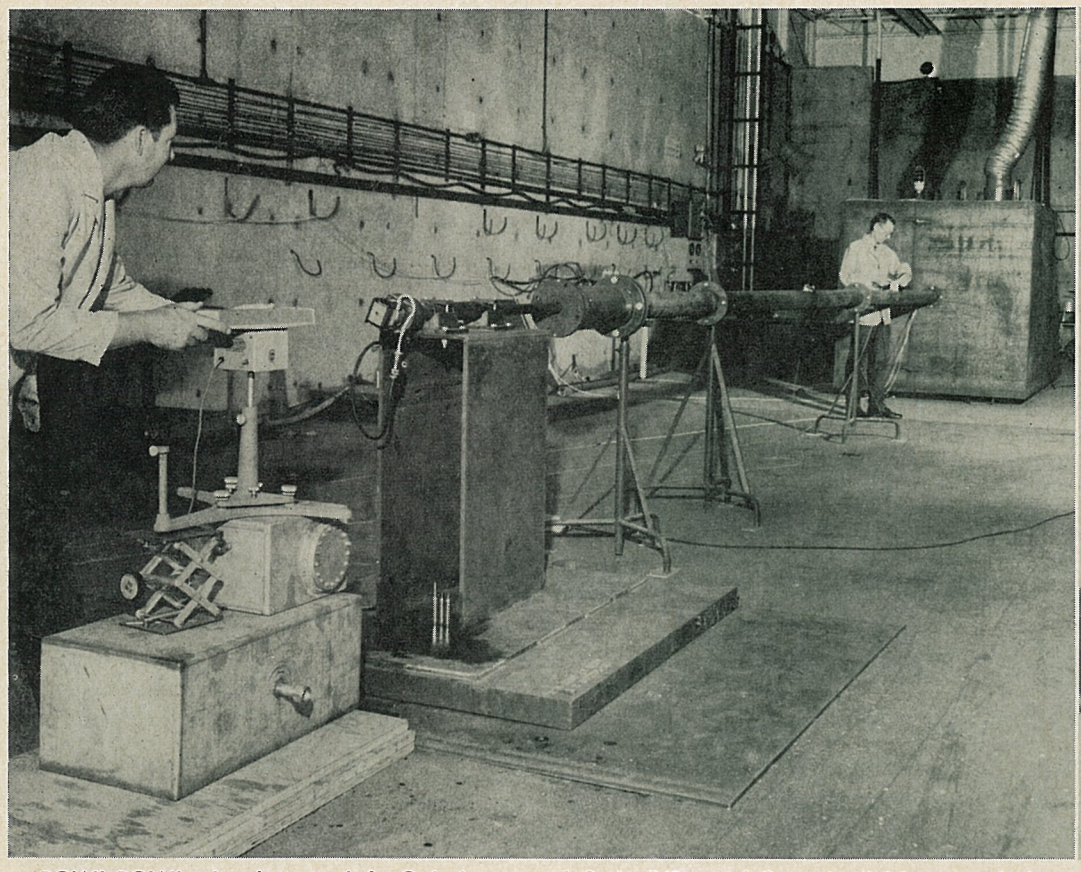
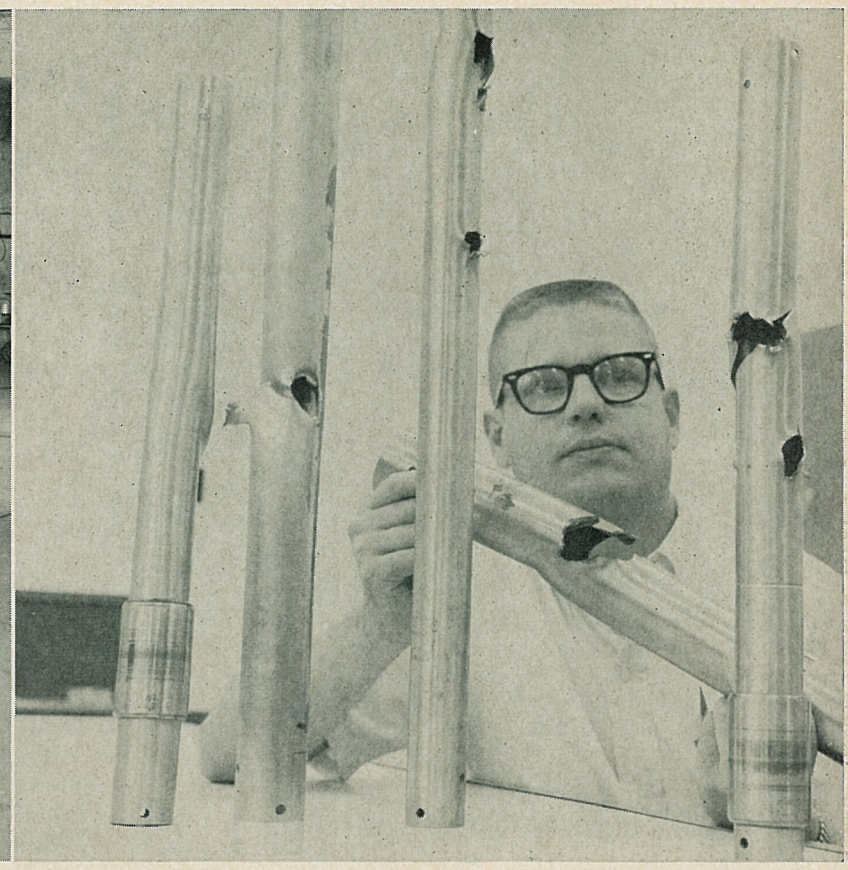
Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.





POW! POW!—In photo at left, C. L. Lucas and G. L. O'Barr of Convair division prepare for firing in new ballistic test facility, used in study of gunfire damage on airplane structures. At right, M. D. Campbell checks damage inflicted by .50-caliber gunfire on CL-84 power train shafts.

Running Rapids

Jim Moore, Man of Many Sports, Turns to Rough Water Kayaking

Look for the action and there you will find Jim Moore, expert mountaineer, skier, sailplane pilot, and now—kayaker.

Moore, engineering draftsman at Electronics-San Diego and recently of Convair, who has climbed the highest mountains in this country and South America **(GD/NEWS, Oct. 27, 1965)**, is now becoming skillful at sailing a kayak, one-man Eskimo-type canoe, through the roughest waters he can find.

Although he discovered the sport just a couple of seasons ago, Moore was one of the seven-man team representing the U.S. in the World Kayaking Championships at Lipno, Czechoslovakia, this past summer. He qualified for the international event by his standing in the U.S. Championships held at Salida, Colo., on the Arkansas River.

The four-day international competition was most grueling, Moore recalled. Hundreds of kayakers from many countries drove themselves to the exhaustion point. One event, the slalom, was over a wild water course 500 yards long through 50 "gates"—poles suspended from wire over the river. Contestants were required to thread their way through the gates both up and down stream, sometimes backing through—on command. The other main event was a down river speed race for 20 miles against time.

The U.S. team placed in the top ten per cent of competition, but far behind the leading Czechoslovakian team. The winning individual was from Austria.

"Friends introduced me to kayaking on a visit to Colorado a couple of summers ago," Moore said. "And, I knew at once that here was something else I had to do."

Now the excitement of keeping the kayak upright in the tumbling water of a turbulent river leads him on long weekend jaunts as he seeks the "whitest" waters he can find. He usually drives several hundred miles, to the King or Kern Rivers, to ride his kayak through the rapids.

And, to keep himself supplied with kayaks—one lasts only a season—Moore had a mold made from a kayak he ordered from Belgium.

"Kayaking is just as exciting in its way as scaling the highest peak," he said. "Each sport has a special thrill of its own that can't be compared to any other."

WILD WATER—Electronics-SD's Jim Moore, intrepid adventurer, supplied photo of kayaking on roiling waters of Idaho's Salmon River to show thrills of latest sport.

Design Specialist Chairs Coast Panel

Harold P. Owens, FW design specialist, served as co-chairman of a session on advances in composites at the 12th annual National SAMPE Symposium and Exhibition in Anaheim, Calif., recently.

The SAMPE (Society of Aerospace Material and Process Engineers) symposium drew nationwide participation from engineers and manufacturers to hear of revolutionary advances being made in the field of structural composites.

NASA's Mariner 5 Flies Past Venus

NASA's Mariner 5, launched June 14 by Convair's Atlas SLV-3 No. 5401 and an Agena second-stage vehicle, flew past Venus on Oct. 19 after a 217-million-mile journey through space.

The Mariner 5 Atlas booster was the 51st SLV-3 flown and marked the 94th Atlas launch with an Agena.

Convair's Atlas-Centaur 19 and 20 vehicles are scheduled to launch two additional Mariner spacecraft for Mars flybys in 1969.

Magnuson Addresses Audiences on ZD

W. E. Magnuson, chief of special projects in reliability control for Convair division, spoke on "Zero Defects as a Management Tool" Oct. 11 at a meeting of the Atlanta, Ga., chapter of the Armed Forces Management Association at the Atlanta Army Depot.

He also discussed "Quality Performance and Zero Defects" Oct. 26 at a meeting of the Antelope Valley Management Club at Edwards AFB, Calif.

Research Engineer Earns PhD-Chemistry

S. H. Goodman, Pomona division senior research engineer in structures and materials, has earned the doctor of philosophy degree in chemistry at the University of Southern California.

He received as BS degree from Duke University in 1962 and since that time has been a graduate student at USC where he also served as a teaching assistant and research assistant.

BUSINESSMEN PAY VISIT TO PLANT

Twelve Mexicali businessmen visited Convair division's Kearny Mesa plant Oct. 25 while in San Diego on a Chamber of Commerce-sponsored industrial tour. The group lunched in the Kearny Mesa plant cafeteria as guests of the Prophet Co.

Bullets Pierce Plane Structures in Battle Damage Test Chamber

A new ballistic test facility at Convair's Kearny Mesa plant is being used by the division's materials and processes group to study effects of gunfire damage on materials and structures under operating conditions.

Results may be applied to design of aircraft and other structures for improved "resistance to battle damage." Initial tests, which began July 21, were in a Company-funded study of effects of .50-caliber gunfire on lightweight-steel power train shafting for CL-84 tilt-wing aircraft.

Cartridges of .50-caliber and smaller are fired electronically in the new facility, with cases being loaded with varying types of bullets and amount of gunpowder for desired impact effects.

Bullets, fired through rifled and smooth-bore gun barrels, travel through a muffler chamber and a 30-foot steel flight tube before entering an enclosed target area, penetrating the test material and stopping in a sand-filled projectile trap backed by a steel plate.

A light beam from a small helium-neon laser is used in charting the flight path and impact point on the test material before each firing.

Fixtures are used in the 6x6x 14-foot steel target box for loading of sheet, plate, tube, rod or composite specimens in tension, compression or shear and to support the specimen at desired angle to the bullet flight path.

Beginning in January, an additional fixture utilizing a 400,000-pound-capacity hydraulic ram will be used in testing aircraft structural members under service loads.

The new test facility is in Bldg. 25, a reinforced concrete structure east of Bldg. 33, formerly used for launch vehicle pressure testing.

Malcolm D. Campbell, a staff scientist, is project engineer, reporting to James F. Haskins, chief of the materials research group.

Others working at the facility are Gerald L. O'Barr, physicist, Edmund Salter, engineering assistant, Clarence L. Lucas, materials research mechanic, and David Farrelly Sr., research test lab technician. Salter, Lucas and Farrelly all serve as ammunition loaders, using commercially purchased powder and cartridge cases.

Test instrumentation and firing equipment are located in a room adjacent to the "range" and elaborate safety precautions are maintained. Each person entering while tests are being set up signs a control room roster and takes one of 10 keys controlling portions of the firing circuit. An intercom system is used to clear the "range," warning lights in and around the area flash when the gun is loaded and the electronic firing pin is in place, and the entry door is barred with chained warning signs.

The gun can not be fired until the target box is latched and all personnel insert their firing circuit keys. Two buttons on the firing console must be pressed simultaneously. A mirror adjacent to a control room window gives an overview of the range at all times.

Timing of the bullet's travel in 1/10-microseconds, from which velocity is calculated, is monitored on an oscilloscope and a timer that are triggered as the bullet passes through aluminum foil timing strips in the flight tube and target box.

Time exposures by a Polaroid camera provide a permanent record of the oscillograph tracings Motion picture cameras also are available for filming specimen and bullet behavior.

Campbell said CL-84 tail rotor and cross wing shafts used in the first test program were hit with single and multiple projectiles while being rotated at operating speed (about 5,000 revolutions per minute) both while torqued to 12,480-inch-pounds service load and in "unloaded" conditions.

"In some cases the shafts were able to maintain service torque after being damaged and in others they did not," he said.

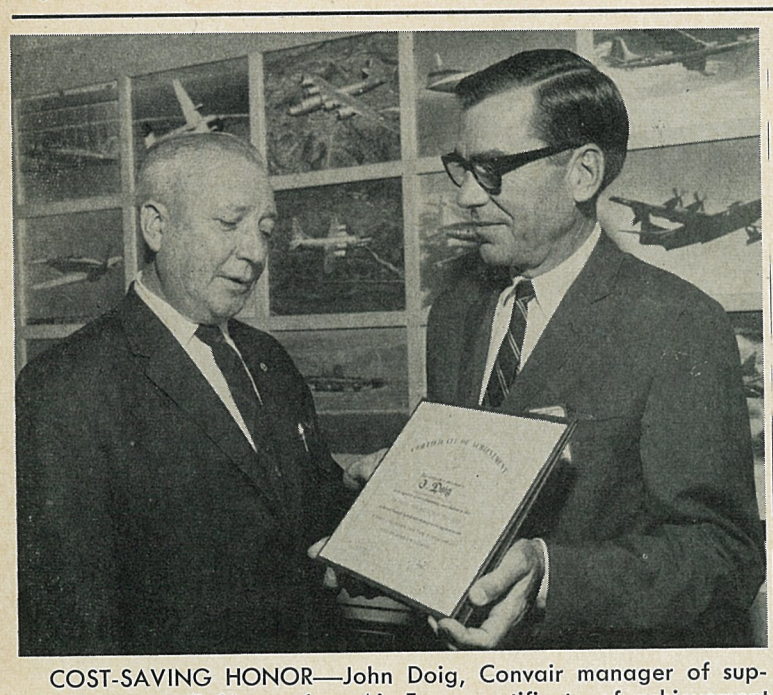
Campbell said officials of the U.S. Navy Aeronautical Structures Laboratory in Philadelphia have expressed interest in an unsolicited proposal from Convair for a study in which structural concepts of aircraft wings with improved resistance to battle damage failure would be developed.

People Mobility

Appointments and Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

ROBERT H. SPARKS (1957) from Convair division to Stromberg-Carlson Data Products as senior quality control engineer; **GILBERT G. RAGAN** (1958) from Convair to contract coordinator, Electronics, San Diego; **ALLEN K. SHRIVER** (1967) from Convair to associate engineer, Electronics, San Diego; **DEWEY J. MANCUSO** (1962) from Convair to Corporate Headquarters; **FRANK JACOB** (1955) from Canadair Ltd. to Pomona as senior quality control engineer; **HARRY C. SIMER JR.** (1953) from Convair to senior engineer, Electronics, San Diego; **EDWARD A. SECOR** (1956) from Convair to Electric Boat; **EVERETT L. HEYING** (1967) from Convair to Electric Boat.



COST-SAVING HONOR—John Doig, Convair manager of support contracts (left), receives Air Force certificate of achievement from C. W. Blakey, Convair director of contracts, for value engineering change proposal which saved over $70,000 on Air Force contract.

AF Commendation Recognizes Value Engineering Proposal

Convair support contracts has been honored by the Air Force for saving over $70,000 on an F-102 modification contract through value analysis.

The division and the Air Force will share jointly in the savings.

A value engineering change proposal, approved by San Antonio Air Materiel Area, contracting agency, made cost-saving alterations in specifications for pylons used with the F-102 external fuel tank pods designed and built at Convair under a modification kit contract.

Value engineering at Convair showed that the chem-milled pylon access doors could be replaced with alternate and interchangeable doors made of thinner material with constant thickness which requires no ribs or milling of material. Second portion of the value analysis resulted in replacing cover assemblies used to close holes in the bottom of the pylon with assemblies which are spot-welded instead of riveted and alodined instead of anodized. Total savings was $72,308.

C. W. Blakey, Convair director of contracts, in behalf of the Air Force last month presented John Doig, manager of Convair support contracts, with an Air Force certificate signed by Gen. T. P. Gerrity, commander Air Force Logistics Command, and Maj. Gen. R. H. McCutcheson, director of procurement and production, Air Force Logistics Command.

The AF also displayed details of the VECP on a story board at the annual Air Force-Industry Cost Reduction Symposium in Boston, Mass., in late September.

GRADUATE—Walter Coyle, left, only Convair apprentice to complete four-year program this year, receives Journeyman Certificate from James Adamson, Lindbergh Field manager of operations.

Four Year Training Completed, Apprentice Now a Journeyman

Walter Coyle, Convair's Apprentice of the Year for 1967, received his journeyman's certificate just a few days before he reached his 23rd birthday.

Coyle is the only one in Convair's apprenticeship program to complete the four-year training this year. He served his four-year machinist apprenticeship in three years, with previous schooling and experience giving him a year's credit.

Besides winning the division's Apprentice of the Year award, Coyle won the California State Apprentice Machinist Contest, competing against other machinist apprentices from all over the state.

He has an almost perfect attendance record at Convair. He has never been tardy and only missed one day's work — and that was to get married!

Coyle now is assigned to Dept. 015 at Lindbergh Field plant as a numerical control machinist.

There are presently 29 in the division's apprenticeship program with more expected to be added early this month.

Savings Plan Changes Are Due This Month

Hourly employes wishing to increase the amount of base pay being withheld for the General Dynamics' Savings and Stock Investment Plan to 6 per cent for the Plan year beginning Jan. 1, 1968, must make application this month.

Forms will be distributed to hourly employes through their departments. More than 80 per cent of the division's hourly employes are Plan members.

Salaried employes wishing to change their investment options or percentage of savings effective Jan. 1 also may make application this month. Forms for this purpose are available at employe services.

Employes with one year's service with the Company are eligible to participate in the Savings and Stock Investment Plan, which has four different investment options. General Dynamics adds 50 cents for each $1 invested by the employe.

91 at Vandenberg Answer Blood Call

A record 91 of Convair's nearly 400 personnel at Vandenberg AFB responded to a call for donors Oct. 12 when Tri-Counties Blood Bank representatives visited the base.

A special effort was exerted for donors after the Blood Bank's reserves reached a critical low Oct. 2 with only two pints of the most commonly needed type, O-positive, on hand.

Marvin Tooley, Convair industrial relations chief at Vandenberg, said the previous record high number of donors was 56 during a Blood Bank visit in 1962.

Employes at Vandenberg have their own "account" with the bank.

General Electric Honors Convair Man

Mickey Cornwall, systems integration specialist in Convair Dept. 984-2, who provides liaison between Convair and General Electric in connection with GE guidance systems, has received a GE trophy recognizing 100 per cent success in 77 consecutive launches.

About 500 of the trophies, featuring a metal Atlas, were presented to GE personnel, including seven stationed at Kearny Mesa. They are Doyle Brinkmeier, Victor Higgins, William Madden, Clarence Taitt, James Smith, Charlotte Monson, Arthur L. Karr. GE guidance systems are used on SLV-3As as well as SLV-3s and some refurbished Atlases.

Computer Director To Speak Nov. 13

Fred C. Forbes Jr., vice president and technical director of the San Diego Computing Center, will speak Nov. 13 at a dinner meeting of the San Diego Chapter of the American Society for Quality Control in the Bronze Room, La Mesa.

He will discuss current and future uses of computers and automation equipment in design and production quality control. Nonmembers are invited.

Tickets can be obtained from P. J. Asprion, ext. 2363 KM; G. A. Gibbons, ext. 663 LF; R. C. Mansell, Electronics-SD ext. 1616; and R. E. Lowe, DCAS plant representative's office, ext. 1327 KM.

GD Men Elected To National Posts

L. I. Medlock, director of reliability control for Convair division, has been elected a member of the board of directors of the Education and Training Institute of the American Society for Quality Control.

Other members of the local ASQC section named to national posts include S. S. Smith of Electronics-SD, general technical council and quality cost committee; C. A. Miller of Convair, secretary, statistics committee; and P. E. Gelles of Convair, program and speakers committee.

The society has sections in major cities throughout the United States, Canada, Mexico and Japan.

GD Son Is Member Of Air Force Band

A Convair son is a member of the U. S. Air Force Band, now touring Alaska to perform at bases in the northern state.

Larry Laffoon, son of Mary Laffoon of Convair factory methods at Lindbergh Field plant, is second violist after just a year in the band and holds the rating of technical sergeant.

CONVAIR COMBINES PROGRAM OFFICES

Convair division's Atlas SLV and Atlas D/E/F program offices have been combined to form the Atlas program office (Dept. 950-3) with Richard W. Keehn as program manager. Keehn reports to Grant L. Hansen, vice president-launch vehicle programs.

'It's Been a Ball,' Says Lucille, After 42 Years With Convair

A girl who started with the Company as a stenographer and rose within a few years to the top management level in purchasing last week finished what turned out to be a stint of nearly 43 years with Convair.

Lucille Metcalf

Lucille Metcalf (Fisher then) left a perfectly good job in early 1925 to join the infant Consolidated firm a couple of months after it moved into quarters at Buffalo, N. Y.

"My mother told me not to," Lucille recalled. "She said that new little company would surely go broke soon!"

Within 10 years Lucille was assistant purchasing agent and responsible for buying for all the planes Consolidated was building. In fact, when her boss, Chuck Leigh, head purchasing agent, went to San Diego to get ready for the 1935 move, Lucille ordered all the purchased items needed to start production of PBYs on the West Coast.

She was one of the six women going West with the Company. Lucille, Ann Howard, and Erma Summer Robbins made the trip with the I. M. Laddons by ship through the Panama Canal. The other three women, Jane Dunn, who retired in 1964 after 40 years, Gladys Roy, and Leta Davis, drove across country.

Lucille held her supervisory post in purchasing until 1943 when the Company was merged with Vultee.

She then went into flight test as secretary to Sam Shannon, then chief test pilot and responsible for all flight operations. In 1956 she moved to General Offices as executive secretary to Tom Lanphier, vice president in charge of military relations.

When the General Offices were transferred to New York in 1962, she returned to Convair division in reliability control at the Lindbergh Field plant where she has been ever since.

"I've had a ball all the way," Lucille said. "And, I wouldn't have had it a bit different. For the most part, it's been an exciting place to spend my working life — watching the aircraft business from the very beginning."

Fifty Attend QC Training

About 50 Convair people attended a "procurement quality control upgrade training program" Friday and Saturday (Oct. 27 and 28) in the Sands Hotel in San Diego. The program was cosponsored by Convair division and the San Diego Section of the American Society for Quality Control.

Representatives from other General Dynamics divisions also attended. Sam Braun, chief of procurement quality verification for Convair, was chairman.

Presentations were given on welding requirements and controls, NASA soldering specification requirements, supplier capability surveys, procurement quality verification planning, review of data articles, and analysis of purchase order clauses and statements.

Also, rubber age control requirements, first-part inspection, tool control at supplier plants, Corporate interchange of services, special processes, material review at supplier plants, and special problem areas.

Welcoming addresses were given by L. I. Medlock, director of reliability control, and R. S. Campbell, manager of procurement quality assurance. Speakers included R. J. Hendrickson, W. F. Hageman, F. J. Wiegand, J. D. Willson, L. E. Campbell, G. A. Knauss, E. C. Gordon, G. R. Shumway, Paul Gelles, W. H. Behrens and Braun. William Olson conducted a plant tour.

Cal Western Dean Will Counsel Nov. 7

Dr. Andrew J. Papageorge, assistant dean of the California Western University School of Business and Economics, Tuesday (Nov. 7) will visit Convair to counsel employes interested in working toward master's degree through the university.

Twenty-minute counseling sessions are being scheduled by Donn Olsen of educational services, ext. 1931 KM.

Cal Western offers evening programs leading to master of science (MS), master of business administration (MBA) and bachelor of business degrees.

Convair Delegates Attend NMA Meeting

Convair Management Club delegates attending the National Management Association convention in Cleveland, Ohio, this week are Ad Mosco, president; B. J. Neal, financial secretary; Al Gross, program chairman; Herb Day, recording secretary; Larry Sweeney, past president; and Wes Magnuson. Magnuson is a nominee for national director.

Class Creates Novel 'Things'

Twenty-one students in a Convair Management Club-sponsored non-technical "Principles of Managing" course at Kearny Mesa each recently spent an evening creating a "thing" from an eraser, 5 thumb tacks, 5 toothpicks, 2 paper clips, 1 gum wrapper, 1 rubber band, 4 washers and 4 cloth patches.

W. F. Chana, instructor for the course, said object of the exercise was to stress the importance of creative thinking in management.

Each of the objects had to be useful, or a model of something useful, reflect being reliable and safe, have balance and be generally attractive, and have a name or title.

The "things" created ranged from models of a swimming pool and a dune buggy to a "two-cent weight scale" and a missile launcher.

The objects were displayed for a day in the executive dining room at Kearny Mesa and members of the class and division executives voted on those considered best meeting the objectives.

Winners were a mobile missile tracker designed by Phil Dyer, a senior maintainability engineer in Dept. 145-1, and a crane amphibious barge devised by Don Lemons, a design engineer in Dept. 542-0.

TOP 'THING'—Objects judged best in creative thinking exercise in "Principles of Managing" course were mobile missile tracker fashioned by Phil Dyer of Dept. 145-1, left, and crane amphibious barge devised by Don Lemmons of Dept. 542-0.

Football Tickets On Sale at LF, KM

Football fans may get their tickets to the next Charger and Aztec games now at Convair employe services at Lindbergh Field plant and at CRA Clubhouse, Kearny Mesa.

Tickets to the Chargers game with the Miami Dolphins, Nov. 12, are in the $4.50 section.

Tickets to the San Diego State Aztecs vs. Montana State game on Saturday, Nov. 18, will be sold at a 50-cent discount. Regular $2.50 ducats are $2 through CRA.

Ski Lessons Series Starts This Sunday, Joe Harris Teaching

Snow ski lessons for beginners will be conducted on dry ground, starting this Sunday, Nov. 5, so neophytes can be ready for first snowfall.

CRA Ski Club Commissioner Joe Harris will instruct for the next three Sundays in Balboa Park. Two sessions will be held each Sunday afternoon, Nov. 5, 12, and 19, on the grass lawn in front of the Puppet Theater. First class is at 1 p.m. and second one at 3 p.m.

The only charge will be a $2 registration fee. All equipment, including skis and poles, are furnished by Stanley Andrews Sport Goods Co. which is also supplying artificial snow for the last session.

Following the series students may join the Convair Ski Club on its regularly scheduled ski trips at cost.

All interested may register at the first session.

Bicycle Club Plans Flinn Springs Ride

CRA Bicycle Club has scheduled a 25-mile Flinn Springs ride Saturday (Nov. 4).

Riders will leave Parkway Bowl at Fletcher Pkwy. and Cuyamaca St., El Cajon, at 9 a.m. and follow the old U.S. Highway 80 into the foothills.

Club members and guests also will make a 50-mile Encinitas ride Nov. 18, leaving Salk Institute in La Jolla at 7:30 a.m. and pedaling along Highway 101. Ride leader is Agostino Arcidiacono, ext. 1648 KM or (home) 454-6329.

Short scenic rides are being continued at 2 p.m. each Sunday with the Islandia Hotel parking lot on Mission Bay as starting point.

Wives to Get Tips On Holiday Parties

Convair Wives will get tips on how to simplify their holiday entertaining at the Nov. 15 luncheon at L'Escale Restaurant on Shelter Island.

Mrs. Nancy Kostman, home economist with the San Diego Gas and Electric Co. will present the program, illustrated by slides, on "Easy-do Christmas Parties."

Social hour will be at 11 o'clock, followed by the luncheon at noon.

Reservations must be made by Nov. 13 through Mrs. George Thompson, 278-1942; Mrs. L. F. Klepach, 264-1013; or Mrs. Daniel Chiarappa 274-2503.

Bridge Club Slates Winter Series Play

CRA Bridge Club has scheduled a winter series Nov. 10 through Dec. 29 with the winner to receive a trophy. Both novice and seasoned bridge players are invited to participate in club play at 7:30 p.m. Fridays in the CRA Clubhouse.

Winners of the Oct. 20 game were Mr. and Mrs. H. R. McCullough, first; Mr. and Mrs. R. T. Rustad; and Mr. and Mrs. C. A. Miller, third.

Mrs. Rustad recently attained the rank of life master.

Halloween Ice Party Planned

Ghosts and goblins will revel on the ice at CRA Ice Skating Club's annual Halloween party at 6:30 p.m. tomorrow (Nov. 2) at the Mission Valley Ice Arena.

The party is open to all General Dynamics families and guests. Admission will be free for all costumed skaters and a normal skate rental fee will be charged for those needing skates.

There will be games and prizes for children and refreshments.

The CRA Ice Skating Club sponsors private skating sessions from 6:30 to 8 p.m. each Thursday at the Mission Valley rink with reduced admission charges. Free instruction classes are conducted for beginning, intermediate and advanced skaters.

Club membership is open to all General Dynamics families at $1 per family per year.

18 Lbs. of Lobster Wins Dive Contest

Rod Johnson brought in 18 lbs. of lobster to win first in Delta Divers' competition at Cardiff-by-the-Sea Oct. 22.

Ten of the 17 divers came in with catches which averaged out at 2 lbs. apiece. The largest lobster, weighing 4½ lbs., was caught by Bob Nicholas.

Barry Wagner's catch totaled 12 lbs. for second place. Harry Weeser was close behind with 11½ lbs. Jim McGinnis and Jorge Zorrilla tied with 9 lbs. each and Cliff Kickbush, CRA commissioner, had 8½ lbs.

The next diving event, last for the season, will be a combined lobster, spearfishing, and scavenger hunt competition on Sunday, Nov. 12, also at Cardiff.

Members of the skin diving club will meet next Wednesday, Nov. 8, at 7:30 p.m. in the CRA Clubhouse to see the movie, "Pearl Divers in Action."

Sports Car Drivers Plan 'Jr. Field Day'

CRA Sports Car Club will sponsor a "junior field day" for General Dynamics sports car enthusiasts beginning at 11 a.m. Sunday (Nov. 5) on the northeast parking lot adjacent to Missile Park at Kearny Mesa.

Events will include a 45-minute seat-of-the-pants rally, a gymkhana and a slalom. Several classes will be arranged according to performance ability of cars and drivers. Trophies will be awarded to overall event and class winners.

For further information, call Bruce Bertsch, ext. 2135 KM; Jack Gallant, ext. 2976 KM, or Marv Jensen, ext. 860 KM.

Basketball Team Tryouts to Begin

Tryouts for Convair's basketball team which will play in the City League this season will be tomorrow evening, Nov. 2, at 7:40 p.m. on Court 3, Muni Gym.

Gil Crosthwaite, manager of the hoop team, will choose the 10 top players from the practice sessions. All Convair employees and members of their families are eligible.

League play will start the first part of December.

Radio Hams to Tour Transceiver Plant

CRA Amateur Radio Club members and guests tomorrow evening (Nov. 2) will visit Swan Electronics, manufacturers of one of the most popular ham transceivers, in Oceanside.

The group will meet at the club's ham shack at the CRA Clubhouse and leave at 7 p.m.

MANAGERS MEETING SET FOR NEXT WEEK

Last meeting of managers of teams in the plant basketball league before the season opens will be next Thursday, Nov. 9, at 7 p.m. in CRA Clubhouse. Both fast break and slow break leagues will be represented.

OFF AND RUNNING—Convair water skiers, Roy Poston, Tom McLain, and Chuck Backus, skim water as they take off on Colorado River during CRA weekend early last month. Ken Theilig was driving boat.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Nov. 7. Call ext. 1071 LF or 3322 KM.)

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ADVENTURERS—Meeting Nov. 15.

ARCHERY—American target shoot 1:30 p.m., Nov. 5 at CRA range.

BADMINTON—Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park. Call Al Van Norman, ext. 1864 KM, for information.

BASKETBALL — Tryouts tomorrow, Nov. 2, 7:40 p.m at Muni Gym, Balboa Park, for City League team.

BICYCLE CLUB—25-mile Flinn Springs ride Saturday, Nov. 4. Leave Parkway Bowl, El Cajon, at 9 a.m. Short rides at 2 p.m. each Sunday leave from Islandia Hotel, Mission Bay.

BONAIR FLYERS—Meeting Nov. 7, 7:30 p.m., CRA Clubhouse. Fly-in to Rosarito Beach Nov. 12. Call Red Taylor, ext. 1827 KM, or Lyle Wood, ext. 3210 KM

BOWLING—IRC tournament, Pacific Rec., Nov. 4-5.

BRIDGE—Winter series starts Nov. 10. Play every Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS—Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

CHORUS—Rehearsals open to all employes and members of families each Tuesday evening, 7:30 p.m., CRA Clubhouse. Call Jim Pate, ext. 3034 KM; Jo Anne Bray, ext. 1091 LF; or Walt Minor, ext. 1111 KM after 4:30 p.m.

COINEERS—Meeting Nov. 15.

DELTA DIVERS—Meeting Nov. 8, 7:30 p.m., CRA Clubhouse. Last dive of season Nov. 12 at Cardiff.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB — November meeting, originally set for tonight, cancelled, annual Christmas party Dec. 6.

GOLF—CRA tourney Nov. 4-5, Coronado course.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Mondays through Fridays; 10 a.m. to 5 p.m., Saturdays. Call ext. 1111 KM.

HI/FI MUSIC—Meeting Nov. 7, 7:30 p.m., CRA Clubhouse.

ICE SKATING—Halloween party 6:30 p.m. tomorrow, Nov. 2, at Mission Valley Ice Arena.

PISTOL SHOOT—Club shoot Nov. 12, 9:15 a.m., SD Police Pistol Range.

RADIO CLUB—Meet tomorrow, Nov. 2, 7 p.m., CRA Clubhouse.

RIDING CLUB—Movie Nov. 8, 7:30 p.m., CRA Clubhouse.

RIFLE CLUB—Senior shoot Wednesday, Nov. 8, 7:30 p.m.; junior shoot Nov. 4 at Gillespie Field Range.

ROCKHOUNDS—Meeting Nov. 8, 7:30 p.m., CRA Clubhouse. Field trip to Rockhound Roundup at Mojave Nov. 11-12.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB—Dry land ski classes start Nov. 5, 1 p.m., Balboa Park. Meeting Nov. 7, 8 p.m., Catamaran Hotel, Mission Blvd. Ski movie. Water ski trip to Buckskin Park Nov. 11-12. Thursday evening water ski sessions discontinued. Call Harry Eastman, 274-4982.

SPORTS CAR CLUB—Meeting Nov. 8, 7:30 p.m., Convair executive dining room, Lindbergh Field. Junior Field Day 11 a.m., Nov. 5, CRA parking lot. Call Bruce Bertsch, ext. 2135 KM; Jack Gallant, ext. 2976 KM; or Marv Jensen, ext. 860 KM.

SQUARE DANCING—Dynamic Eights dance every Thursday evening, 7-10 p.m., CRA Clubhouse.

STAMP CLUB—Meeting Thursday, Nov. 9, 7 p.m., CRA Clubhouse.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamics Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB—Meeting Tuesday, Nov. 7, 7 a.m., Convair executive dining room, Kearny Mesa. Call Beth Underkofler, ext. 1718 KM.

TRAILERS—CRA Travelers meet Tuesday, Nov. 7, 7:30 p.m., CRA Clubhouse.

TROPICAL FISH—Meeting Monday Nov. 13, 7:30 p.m., CRA Clubhouse.

WIVES—Monthly luncheon Nov. 15 at L'Escale Restaurant. Call reservations by Nov. 13 to 278-1942, 264-1013, or 274-2503. Potluck luncheon Nov. 29 CRA Clubhouse.

WOMEN'S GOLF—Monthly tourney Nov. 11 at Penasquitos Country Club.

Bonair Flyers To Hold Fly-in

Bonair Flyers will hold a fly-in to Rosarito Beach in Baja California on Sunday, Nov. 12, with anyone interested invited to go as pilot or passenger.

Reservations may be made by calling Commissioner Red Taylor at ext. 1827 KM or Lyle Wood, ext. 3210 KM.

Price will depend on the type of plane and how many passengers in the plane.

A cook-out will be held on the beach and the day spent swimming, hiking, or riding.

Departure will be before 10 a.m. from Montgomery Field and return will be before dark the same evening.

The trip will check out pilots for Baja California flying to familiarize them with the airport and procedure of clearing customs. Those qualifying will fly as co-pilots with experienced flyers.

Convair Riders Hold Hayride to Ranch

Two wagonloads of Convair Riding Club members and their families were escorted by 10 horsemen over country roads on the evening of Oct. 14 at the club's annual hayride.

Forty joined in the old-time entertainment and ended the ride with refreshments at the Black Mt. Ranch.

A Halloween party last Saturday, Oct. 28, drew a crowd to the hamburger fry and costume party at the club pavilion in CRA Missile Park.

Judy Watson was chairman of the fry and Mickey Underwood, chairman of the party following.

Briefing Planned For Mexico Tour

A meeting will be held on Nov. 16 of all General Dynamics people interested in learning about the annual Christmas holiday trip to Mexico. The briefing will take place in the Convair executive dining room, Lindbergh Field, at 7 p.m.

Jim Hardison of Convair support contracts and tour conductor will explain trip details, tourist requirements, itinerary, and show slides of a similar tour taken last year.

Dates of this year's Mexican trip are from Dec. 23 to Jan. 7. Christmas will be celebrated in Guadalajara and New Year's Day in Taxco.

For further information call Hardison at his home phone, 276-5805.

Discount Offered On Racing Tickets

Mail-order coupons for $4 general admission tickets ($1 discount) for two future events at Riverside International Raceway are available at employe services outlets.

The Rex Mays' 300, with Indianapolis-class racing cars, will be held Nov. 26 and the Motor Trend Riverside 500, featuring current-year stock cars, is scheduled Jan. 21.

Skiers to Visit Colorado River

Convair water skiers are planning a weekend trip to Buckskin Park, near Parker, Ariz., over Nov. 11 and 12.

Anyone interested in joining the outing may call Harry Eastman, home phone 274-4982, for information.

Eleven of the CRA group traveled to the Colorado River for a weekend of water skiing Oct. 7 and 8.

In another Ski Club event, between 40 and 50 attended the annual beach party at Crown Point, Mission Bay, Sunday, Oct. 1.

The Thursday night water skiing sessions have been dropped for the winter months. However, water skiing will continue on Saturday and Sunday mornings off Crown Point for as long as the weather is good.

Women Golfers Earn Trophies

Trophy winners at the GD Women's Golf Club tourney held Oct. 14 at the Tecolote Canyon Course were Mabel Dunn for Flight A and Florence Kell, Flight B.

Trophies at the monthly events go to those in each flight with the lowest net scores who have not previously won the award. Scores are not necessarily the lowest for the match. Trophy winners will meet for a trophy play-off at the end of the year.

Net scores for the October match were: Flight A—Mrs. Dunn, 64; Iris Oster, 60; Edith Mellett, 61; and Jeannine Letzring, 65; Flight B—Mrs. Kell, 60; Gerry Swanson, 64; Evelyn McFall, 64; and Vi Gilbert, 65. Gift certificates went to second through fourth places.

Any woman employe or wife of a General Dynamics employe employed at any of the San Diego divisions is eligible to take part in the ladies' golf club. Interested women may contact Ora Carpenter, membership chairman, at her home phone evenings, 223-6095.

Tournaments are held the second Saturday of each month. Next one will be Nov. 11 at the Penasquitos Country Club nine-hole course.

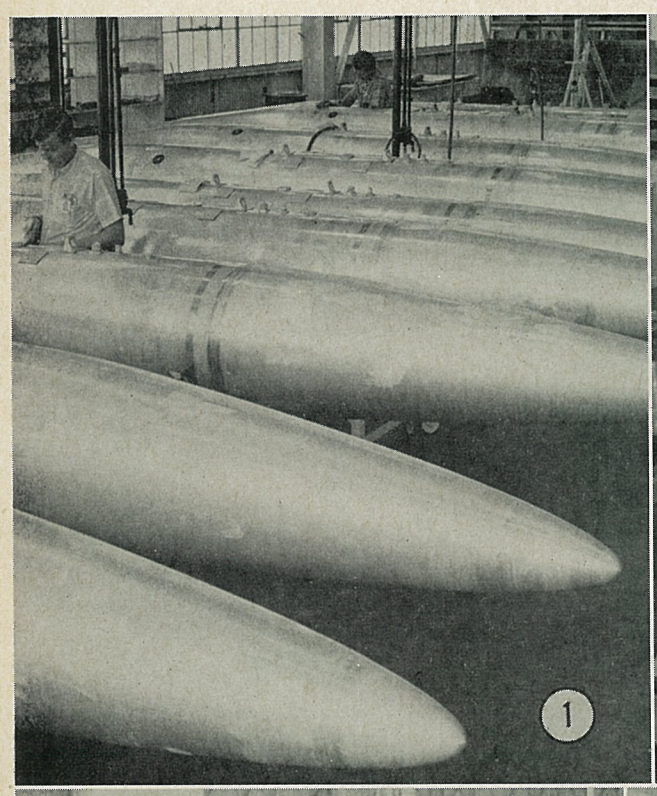
Rockhounds to Hold Silent Auction Nov. 8

CRA Rockhounds will gather at the Kearny Mesa Clubhouse at their Nov. 8 meeting, 7:30 p.m. for a fund-raising silent auction. The item on sale goes to the person bidding the highest when time is called.

Rockhounds, families and friends are planning a field trip Nov. 11-12 to the annual International Rockhound Roundup 17 miles east of Mojave on Hwy. 58. Maps and details will be on CRA bulletin boards throughout the plants for the information of all Convair people interested in attending.

Members of the Rockhound group who have not received diplomas for completion of lapidary instruction may call Hal Leppart, ext. 1704 LF.

Production Programs Supporting F-102s and F-106s Cover Wide Range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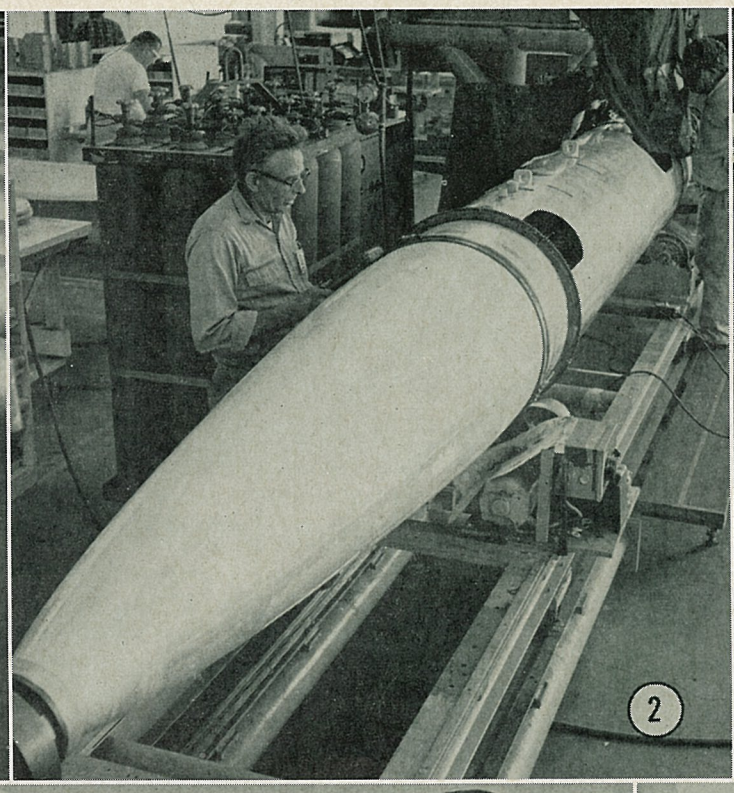
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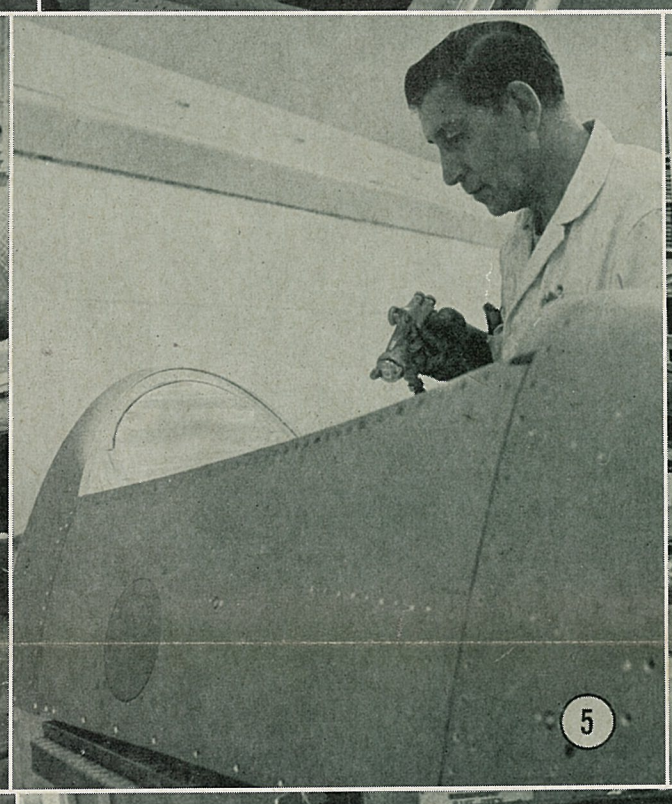
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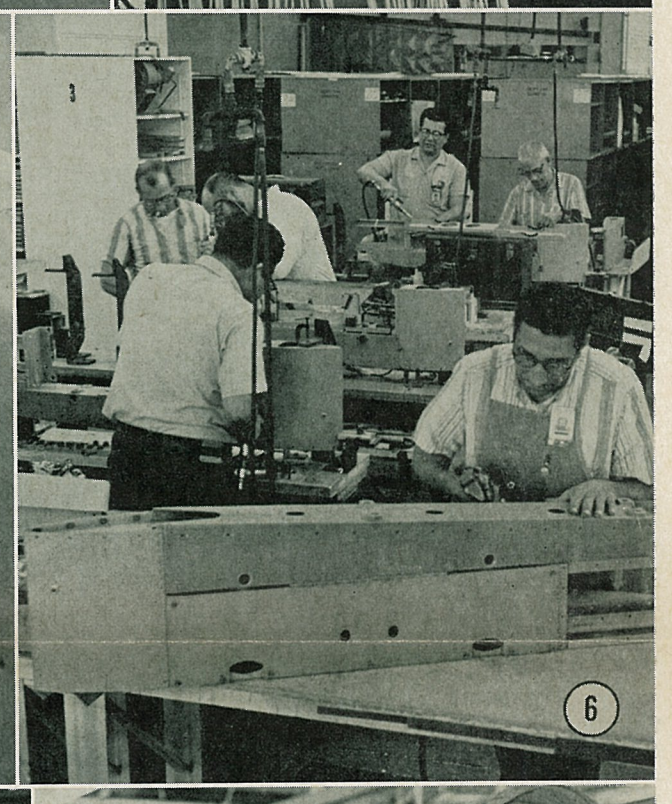
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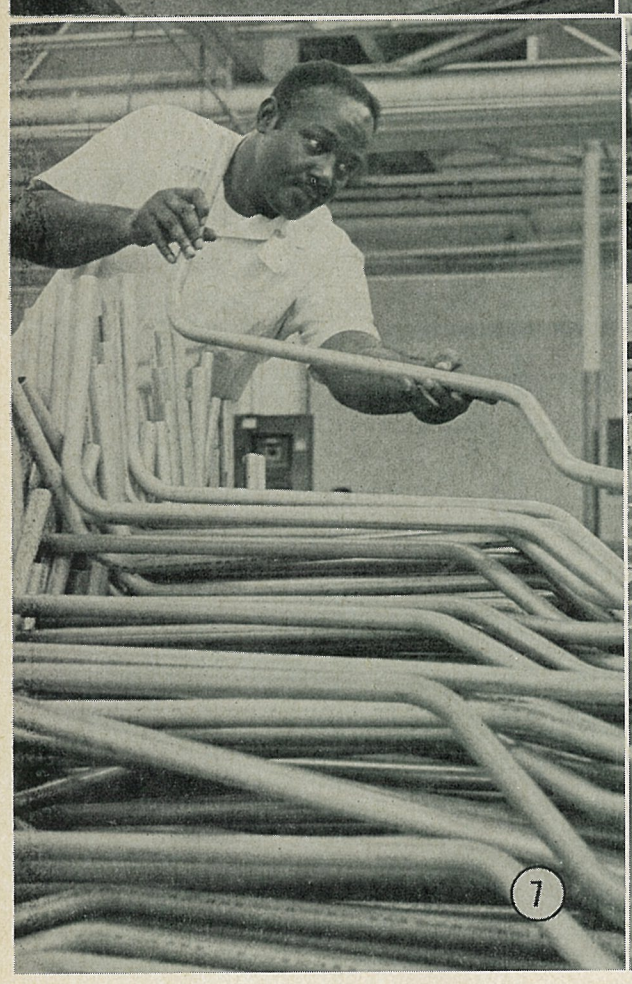
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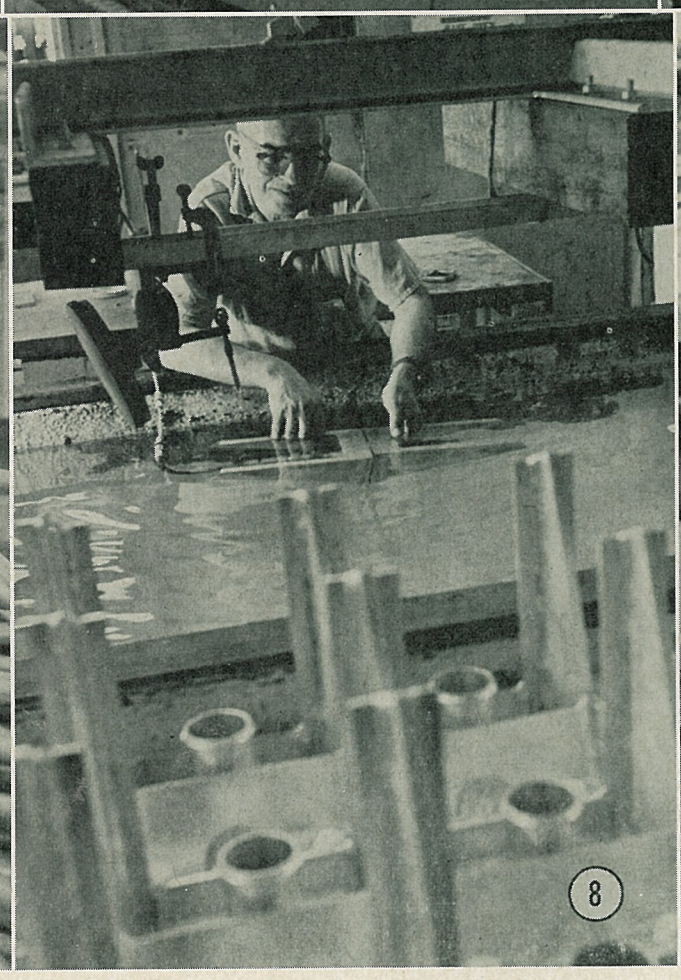
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Convair production programs in support of F-102 and F-106 jet interceptors for the Air Force are shown in wide range of operation in progress at both Lindbergh Field and AF Plant 19:

1. F-106 external fuel tanks in final pressure tests in Dept. 020 at Plant 19. Tanks are being completed at rate of 20 a week. Total order of 269 ship sets is due to be finished by middle of this month.

2. Andrew Flood, assembler, and George Coker, welder, weld F-106 tank sections together on Heliarc welding machine in Dept. 020.

3. Sue McElroy, fabricator in electric bench, Dept. 016, at Lindbergh Field plant, cuts wires for harnesses for first F-106 solid state computer unit. 268 ship sets are on order.

4. F-106 air-to-air refueling receptacle assembly area on mezz of Bldg. 2 at Lindbergh Field plant has 36 people turning out eight a month for B version and 35 a month for A version.

5. Danny Cervantes sprays white epoxy fuel resistant paint inside receptacle in Bldg. 1 paint shop at LF.

6. F-102 pylon assembly line in Bldg. 1, LF, turns out four units a day. At present 11 assemblers are engaged in pylon assembly.

7. Henry Hedgeman, Dept. 002 tube bender, places tube for F-102 pylon on cart containing pile of completed tubes.

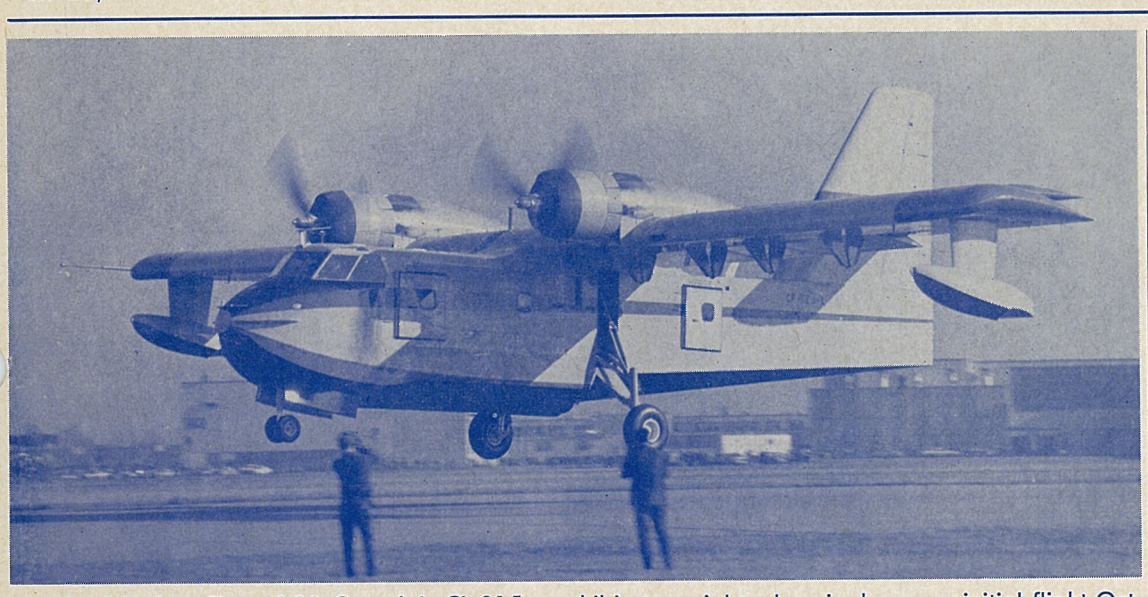
8. R. W. Willig, metal fitter in Dept. 002, submerges F-106 parts for ARA receptacle during pressure tests for leaks.

9. Thelma Marlor, electrical and electronic bench assembler, Dept. 016, ties protective bag over plugs on harnesses for F-106 kits. Electric bench is doing work for F-102 aircraft lighting changes, F-106 multi-mode storage tube, F-106 vertical instrument gyro, and is just beginning work on F-106 UHF/TACAN modification kits.

MAIL EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 23 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, November 15, 1967



AIR-BORNE — First of 30 Canadair CL-215 amphibious aerial tankers is shown on initial flight Oct. 23 at Montreal. Canadair is building 20 for Province of Quebec Forestry Service and ten for Government of France's "Protection Civile." Capable of picking up 1,440 U. S. gallons of water while taxiing on lake, CL-215 is first aircraft to be designed primarily for task of fighting forest and other ground fires from air by "water bombing." Determined sales effort is being conducted, particularly in California where aircraft would have been invaluable if available to fight recent forest fires.

Performance on C-5 Program Wins Praise

Convair's performance on the C-5 program has been praised by Lockheed-Georgia Co. as "outstanding."

H. Lee Poore, Lockheed-Georgia vice president, in a recent letter to Jack L. Bowers, Convair division manager, said:

"At the beginning of the C-5 program, we expressed the thought that although the challenges in such a gigantic program were great, the opportunities loomed even greater. In this, our faith is stronger today than ever before.

"With the successful completion of the first C-5 empennage, Convair has met and faced its challenge in a manner that you and all your personnel can justly be proud. Convair has continued its fine tradition of delivering a quality product on schedule and has again earned Lockheed's sincere gratitude. Please convey my personal thanks to Bob Miller (Convair C-5 program manager) and all the other fine Convair employes involved in our program.

"Now Lockheed squarely faces its challenges of final assembly, roll-out, and successfully flight testing the C-5. With outstanding subcontractor performance such as demonstrated by Convair, we feel certain the outcome will be a happy one."

★ ★ ★

"WELL DONE" SENT ELECTRO DYNAMIC

Lockheed also had praise for another General Dynamics division this month.

Electro Dynamic, Avenel, N. J., received a "well done" from Tim Spillane, Lockheed-California Co. purchasing agent, for "meeting the first shipping commitment on a major development program with short time spans." He referred to delivery of air inlet fans for AAFSS helicopters.

★ ★ ★

SECOND EMPENNAGE GOES TO LOCKHEED

Second C-5A empennage built

(Continued on Page 2)

F-111s Kept Plenty Busy, Air Hours Go Over 5,000

F-111s attained over 5,704 hours of flight on 3,061 sorties through early November as testing continued at a stepped-up pace across the nation.

Air Force F-111As logged most of the time — over 5,066 hours during 2,636 flights. Navy F-111Bs accounted for 637 hours on 425 flights. Supersonic speeds were reached on a total of 246 flights.

"Overall, the program is moving at a faster pace," said Bob Moller, manager of 111 flight test. "The average number of hours flown by planes in the test program continues to increase each month."

At Fort Worth division, a number of F-111As — and one F-111B — are in various stages of testing and development.

F-111B No. 5 has been modified for carrier-suitability tests slated for Edwards AFB in the near future. Following the Edwards test, No. 5 will undergo further testing at Patuxent River Naval Air Station, Maryland, then be turned over to the Navy for flights from a carrier.

F-111A No. 3 is being equipped with a Mark II terrain-following-radar (TFR) system, which will be tested shortly after the first of the year. Later, the plane will go through low-level supersonic sorties at Edwards.

A new ballistics computer has been installed on F-111A No. 10, which will report to Edwards soon for a series of drop tests.

The reconnaissance prototype, RF-111A No. 11, is being readied at Fort Worth for a first-flight sometime in December.

Also at Fort Worth are: F-111As 14 and 16, undergoing engine and inlet development; No. 18, the FB-111 prototype now equipped with tanks; No. 20, stability and control tests; No. 22, modified to production configuration for upcoming Category II performance tests at Edwards; No. 33, being readied for a flight to Nellis AFB following acceptance flights; Nos. 34-38, production planes in various stages of preparation for flight; and No. 25, FB-111A avionics systems tests.

At Edwards AFB, Category II testing is being carried out by

(Continued on Page 2)

Atlas-Centaur Sends Surveyor On Way to Moon

Convair's Atlas - Centaur 14 started Surveyor 6 on its way to the moon Nov. 7 with such precision the spacecraft would have landed within 60 nautical miles of its target with no mid-course correction.

The spacecraft was the third in the Surveyor series targeted for landing on the rugged Sinus Medii near the center of the moon's visible face. Surveyors 2 and 4, though successfully launched, failed to achieve successful landings.

Convair's Atlas SLV-3C No. 5902 booster lifted Centaur 11D and Surveyor 6 from Complex 36-B at the Eastern Test Range in the AC-14 flight. After Atlas separation 4.1 minutes later, Centaur's liquid hydrogen engines were fired for a 5.39-minute "first burn," followed by a 12.8-minute orbital coast and a 1.9-minute "second burn" of the Centaur engines.

The Surveyor's landing legs and antennas were extended and

(Continued on Page 2)

Engineer to Chair National Committee

P. A. Little, Fort Worth division senior design engineer in the material design and empennage group, has been elected chairman of the National Aerospace Standards Committee of the Aerospace Industries Association.

The committee is comprised of 48 technical representatives from aerospace companies in AIA, plus 18 liaison representatives from service organizations.

Purpose of the group is to develop, maintain and promote usage of national aerospace standards.

SLV-3 Performance Perfect In NASA Satellite Launch

Perfect performance by Convair's Atlas SLV-3 No. 5103 and two "burns" of an Agena second-stage vehicle sent NASA's third Applications Technology Satellite into space Nov. 5 from Complex 12 at the Eastern Test Range.

The 850-pound, spin-stabilized satellite, built by Hughes Aircraft Co. for NASA's Goddard Space Flight Center, has been "parked" for five years of operation in synchronous orbit 22,300 miles over the Atlantic Ocean near the mouth of the Amazon River off South America.

Thomas Chitty was Convair launch conductor with William Apfel as assistant. James L. Minos was program manager for the booster.

Richard W. Keehn, Atlas program manager, was present for the launch.

ATS-3 carries 18 experiments to provide practical benefits from space technology, including a spin-scan cloud camera to take color photos encompassing one-third of the earth's surface.

Frank Davis Discusses Misleading Tactics Employed by Critics of F-111

(The following story which appeared Nov. 7, 1967 in the Fort Worth Star-Telegram, is reprinted by permission.)

By DON McDOWELL

General Dynamics-Fort Worth president Frank W. Davis last week told a group of writers how to assassinate the character of an airplane.

First, he said, you talk about weight. Take a figure mentioned in an idealistic sense and compare it with the actual projected weight of the airplane. Express the difference in tons — tons sound heavier.

Talk next about range of the aircraft. But limit your discussion to one portion of a mission. Don't tell anybody you aren't talking about a complete mission.

* * *

MOVE ON to how high the plane can fly. But limit such discussion to a mission the airplane was not designed to fly and use terms familiar only to a few.

Explain that the plane costs much more than had been announced originally. But use early planning estimates on the one hand and contract prices on the other. Take care not to point out that the contract prices include costs of developing seven models for three nations.

Say the airplane is behind schedule. But say nothing about scheduling limitations that were built in and anticipated.

* * *

POINT WITH relish at test pilots' listing of improvements needed. But don't acknowledge that test pilots are paid to find areas where improvement is needed. By all means don't let on that the list you are making is much like any list from any aircraft development program.

Make it a policy to use numbers. Lots of numbers. Be sure they are accurate numbers. But use them out of context.

These, Davis said, are tactics that have been employed with much success by critics of the F-111.

His remarks were made in General Dynamics' first rebuttal to invective heaped upon its product.

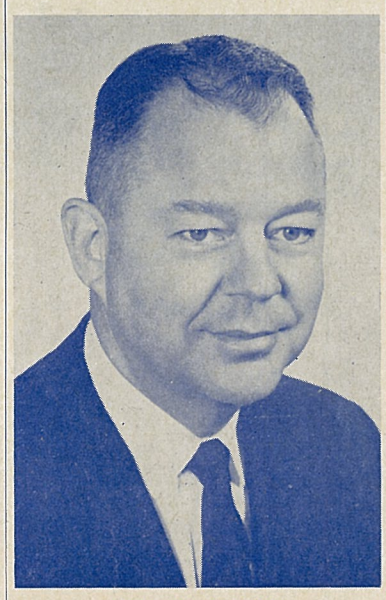
* * *

LISTENING were about 20 aviation writers, most of them from out of state.

Davis' major premise was that critics of the F-111 have created what he termed a "context gap."

He said the critics are "too smart to be inaccurate." They use accurate figures out of context to leave inaccurate impressions, Davis asserted.

Example: It's been said and written than an F-111 operating at full military power and carrying a full bomb load cannot fly over Pike's Peak. Since Pike's Peak is 14,000 feet high, the impression left is that the F-111 loaded with bombs is a ground hugger.



FRANK DAVIS

* * *

THE DEFINITION of "full military power" is omitted. It is simply the thrust available without using the afterburner. On the F-111, full military power is only 45 per cent of the available power.

With use of the afterburner, the F-111 can fly much higher than Pike's Peak.

Davis pointed out that critics made it appear flying over that mountain at that power setting was part of the assigned task of the F-111. They didn't really say it, though. They just left the impression.

Davis went through the list of popular criticisms of the F-111, giving with each complaint the company's rebuttal:

* * *

—**"THE F-111** design was the second best."

Two official groups studied the proposals of the TFX finalists, GD and Boeing.

One of them, the Evaluation Group (composed of 284 civilian and military experts) gave GD a score of 175.6 and Boeing a score of 172.1.

The other, the Source Selection Board, awarded points according to the importance of certain criteria and came up with so-called "weighted scores." GD's score was 662.4 and Boeing's was 654.2.

Only the Source Selection Board, however, made a recommendation, and it chose to disregard its own findings and recommend the Boeing proposal.

Secretary of Defense Robert McNamara studied reports of both groups and selected the highest scoring proposal, General Dynamics.

"Why hasn't this been brought out?" a writer asked.

"I don't believe anyone asked them that question," Davis said. "All the questioning has been done by members of the opposition."

* * *

—**"THERE HAS** been price escalation since General Dynamics got the contract."

Davis said General Dynamics' first bid in 1962 for 23 research and development airplanes was $478.9 million. The contract as negotiated in 1964 was for $476.9 million — $2 million less. "You call this escalation?" he asked.

He said the company's first bid

(Continued on Page 2)

Frank Davis Discusses Tactics Employed by Critics of F-111

(Continued from Page 1)
in 1965 on a production contract for 431 F-111s was $1.889 billion. The contract as negotiated in 1966 was for $1.653 billion — $236 million less. "This is hardly price escalation," he said.

The contract was renegotiated this year to provide for 62 additional production airplanes. The contract for 493 airplanes amounted to $1.821 billion.

* * *

—**"THE NAVY** version of the F-111 is hopelessly overweight."

The F-111B is heavier than GD originally proposed to build it.

This primarily is because the turbofan-afterburning engine developed for the plane (the engine, like the variable sweep wings of the airplane, represents an aviation first) consumes more fuel than expected.

Fuel is heavy. Bigger fuel tanks are heavy. The F-111B thus is heavier than it would be if less fuel were required.

But because weight has been shaved elsewhere and more lifting capability has been designed into the airplane's wings, the extra weight is not as important as critics imply, Davis said.

Competitors for the TFX contract were supplied a list of carriers from which the Navy planned to operate the F-111B.

"The F-111B can operate from all carriers it was intended to and no modifications to the carriers are necessary to handle its weight," Davis said.

* * *

—**"THE F-111 IS** far behind schedule."

Davis said the first research and development airplane was delivered ahead of schedule. The average delivery date for each of the 23 research and development planes was within 17 days of the contract date.

The Navy model will be ready by the time the Phoenix missile system being developed for it is ready. The F-111B will be operational on schedule, Davis said.

* * *

—**"PERFORMANCE OF** the F-111 is unsatisfactory."

These were the objectives of the F-111 program: An airplane with intercontinental range and supersonic penetration capability that would be operational from short fields, suitable for aircraft carrier use, equipped with accurate navigation and bombing systems, highly reliable, one that would require minimum maintenance and would have nuclear and conventional bomb capability and be safe to fly.

In all but one area — aircraft carrier suitability — the plane has been tested and found acceptable. Carrier tests haven't begun, but approach speeds much slower than will be required for carrier landings have been demonstrated.

* * *

—**"THE F-111** was supposed to replace the F-105 and the F-4. It is not good enough to replace them."

Davis said the F-111 has twice the range with twice the payload of the F-105. It is 20 per cent faster, can land and take off in half the space and has a navigation system eight times more accurate than the F-105's.

He said the F-111 can loiter twice as long on fleet patrol as the F-4 while carrying 1½ times the missile load, has three times the missile range, is capable of six times as many "kills" per missile salvo, has an operational radius 500 miles greater than the F-4 with the same bomb load and has a landing approach speed 15 to 20 knots slower.

He indicated the F-4 and F-105 aren't going to be phased out while there's a war in Viet Nam. Every airplane capable of inflicting losses on the enemy is needed there.

* * *

—**"DESIRED** commonality between Air Force and Navy versions was not attained."

From the F-111A and F-111B have come five additional versions to meet a variety of requirements for three nations, Davis said.

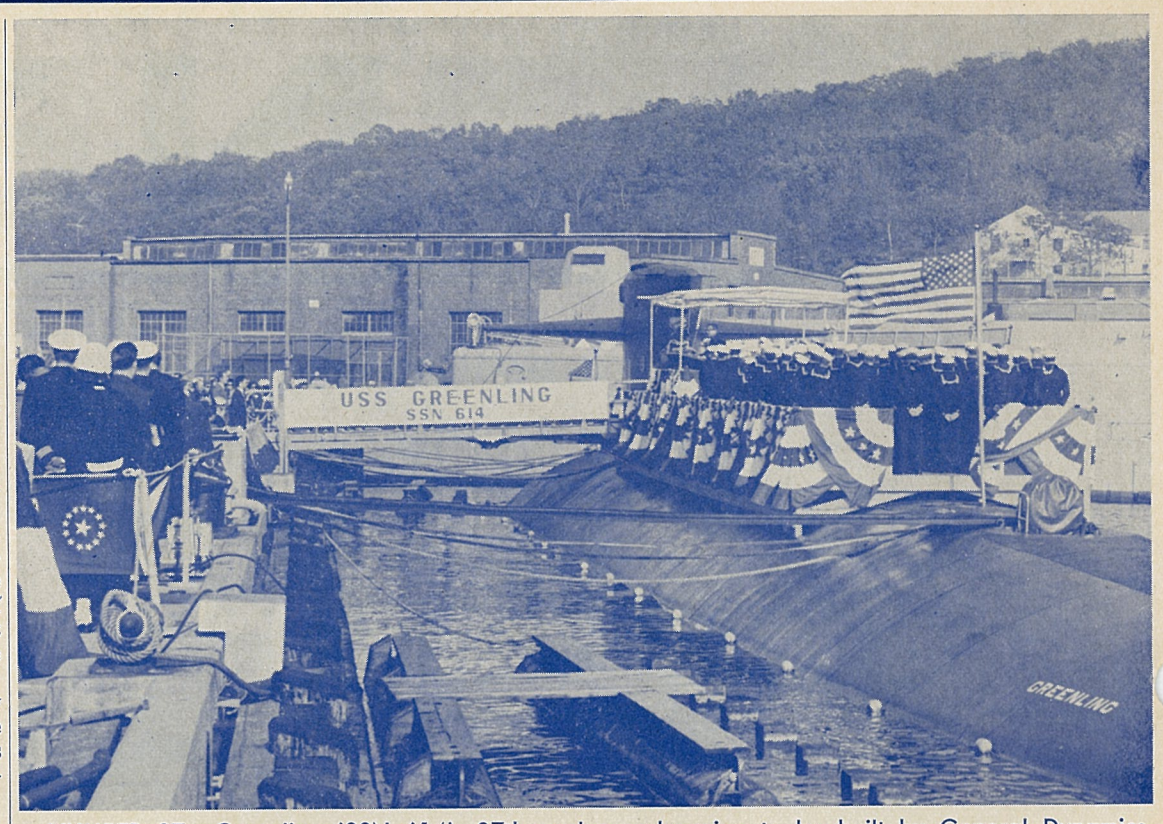
This is commonality as originally intended. The commonality concept involves more than interchangeability of parts, he indicated.

Separate development programs for the F-111A, F-111B, F-111C (the Australian model), F-111D (an Air Force version to incorporate avionics developed since the start of F-111A production), the FB-111 (strategic bomber version) and the RF-111 (reconnaissance version) "would have cost a lot," Davis said.

He said studies are being made to expand further the mission capabilities of F-111s. He cited these examples:

The F-111D will have better air-to-combat capabilities. The present Air Force model is not intended to be an air-to-air fighter. It is a ground support and bombing craft.

The Navy version, however, is an air-to-air craft. Work is under way to give it greater ground support and bombing capabilities.



NUMBER 27—Greenling (SSN 614), 27th nuclear submarine to be built by General Dynamics, joins fleet during commissioning ceremonies Nov. 3 at U.S. Submarine Base, Groton, Conn. A high-speed, deep-diving nuclear attack sub, Greenling was launched by Electric Boat division in 1964 and completed at the Quincy division.

F-111s Kept Busy As Hours Climb

(Continued from Page 1)
the Air Force on the following:

F-111A No. 1, barrier-engagement and refused-takeoff; No. 8, systems testing; No. 17, stability and control tests; No. 19, systems tests; No. 24, weapons tests.

Fort Worth division is carrying out Category I testing at Edwards on: F-111A No. 4, accelerated stall and spin tests; No. 12, loads with weapons; No. 13, structural flight-loads tests; No. 21, testing high-lift devices slated for installation on F-111B No. 6; and No. 23, flutter tests with weapons.

At Eglin AFB in Florida, F-111A No. 7 is being used in weapons-separation tests, while No. 5 is being used to test the electronics countermeasure system and bay gun.

F-111A No. 2 remains at Pratt and Whitney for tests on the engine and engine components.

Other Navy airplanes in test include F-111B No. 1, being test flown at Edwards by Grumman personnel in envelope-expansion flights in relation to the Phoenix missile. Navy F-111Bs Nos. 2 and 3 are still at Hughes.

Atlas-Centaur Boosts Surveyor Toward Moon

(Continued from Page 1)
the spacecraft separated from the Centaur about 25½ minutes after liftoff. The Centaur then was turned and its orbital path altered by "blowdown" of residual propellants.

The Surveyor 6 mission was the third in which Centaur's capability to enter an earth parking-orbit before injecting the spacecraft into lunar transfer trajectory was utilized.

Surveyors 3 and 5 were launched with Centaur two-burn missions and Surveyors 1, 2 and 4 with single-burn, direct-ascent mode.

The Surveyor 6 launch also marked second use of Convair's improved and uprated new Atlas SLV-3C booster.

General Dynamics News

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Inquiries may be directed to GD/NEWS, Box 1950, San Diego, Calif. 92112.

Second Empennage Goes to Lockheed

(Continued from Page 1)
at Convair division arrived at Lockheed-Georgia Co., Marietta, Ga., on Oct. 26. This second article will be used for static tests.

Assembly of the vertical stabilizer box structure for the third empennage has been completed and will be delivered this week to Convair structures test laboratory for stiffness testing. The horizontal stabilizer box structure will go to the Harbor Drive facility later this month for similar testing.

Assembly of the first Air Force C-5A is under way at Lockheed's Georgia plant. The initial aircraft is scheduled for completion early next year.

The three fuselage sections were the first large structural parts to be joined. The sections —forward, mid, and aft—measure 78 ft., 10.; 53 ft., 2 in; and 96 ft., 4 in., respectively.

The C-5 will be capable of airlifting all types of combat and support forces—complete with tanks, equipment, and supplies—anywhere in the world within 24 hours. Its total length will be 246 feet with a wing span of 223 feet and a tail which is more than 65 feet off the ground.

With engines and operating equipment installed, but minus fuel and payload, the C-5A will weigh 323,900 pounds. It will be powered by four General Electric TF-39 turbofan engines.

F-111 Maintenance Boss Says Utilization Tops

F-111As at Nellis AFB, Nevada, have been logging some 65 flying hours a month per plane, and an enviable record is being attained by the 250-man F-111A maintenance team.

"On any other plane," says Chief Master Sergeant Robert E. Murphy, "if you get 25 to 30 hours you figure it's a good rate."

Sergeant Murphy is boss of the 250-man F-111 maintenance team at Nellis. He began his military career in 1941.

"This is a good airplane," Sergeant Murphy said of the F-111A, "and maintenance-wise it's great."

Just as Sergeant Murphy got in on the ground floor of the jet engine in its early development, he was one of the first introduced to the F-111A back in 1965 at Cannon AFB, N. M.

"I went to some high-value maintenance conferences at General Dynamics and other places," Sergeant Murphy said. "Right from the start I thought it was a darned good airplane. Maybe I got a little impatient. I wanted them to give us the airplane so we would have the opportunity to make it go. We're doing that right now. You know, once you get a new plane into the field you can do a lot more with it."

From his first acquaintance with the F-111A program, Murphy decided he wanted his crew chiefs to be introduced to their planes at the production line.

"I want them to get together right at Fort Worth and come back to Nellis with the plane," he says. "I've got some men down there right now. This way they get a better feel for it and get to know the 'bird.'"

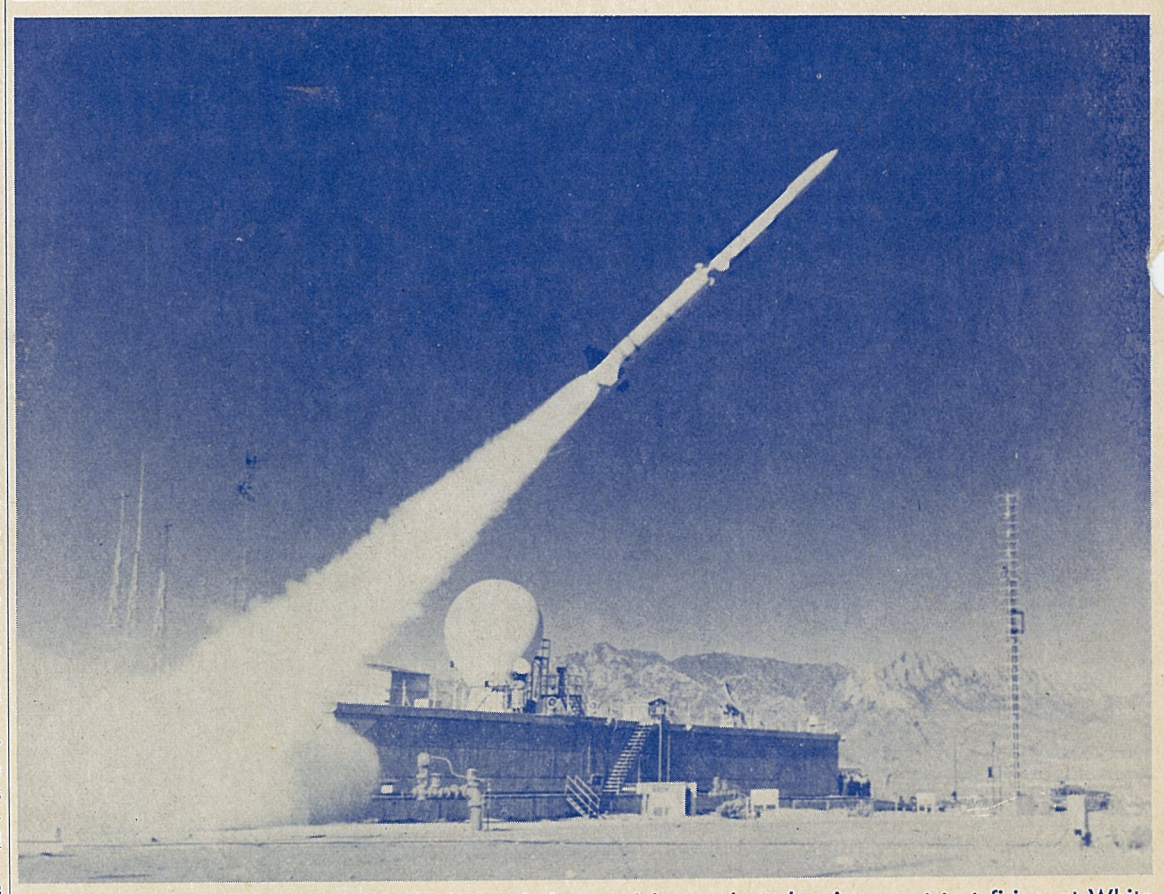
Sergeant Murphy attributes his appreciation for the F-111A to his own early introduction to it and wants his men to feel the same appreciation.

National Elevator Show Held in Vegas

Electro Dynamic participated in the 18th annual convention of the National Elevator Contractors in Las Vegas, Nev., in September.

Representing ED at the convention were: Herman Hanink, division general manager; Charles Harris, industrial sales manager; James Kessock, national accounts manager; and Grover Brown, district manager.

As an associate member of the N.A.E.C., ED participated as an exhibitor of gearless elevator equipment and geared HM and MG sets.



DESERT FIRING—Standard Missile (extended range) leaves launcher in recent test firing at White Sands Missile Range, N. M. Eventually Standard Missile will be used in about 50 U.S. Navy Ships now equipped with Terrier and Tartar.

SUPERFLOC PRODUCTION—New Superfloc insulation created by Convair division for use with future cryogenic-fueled space vehicles is shown in production. In photo at right, Charles Ogle and Gerald Peddie use silk screen to apply liquid adhesive in flock pattern to aluminized mylar sheet while Frederic Yochim assists. In left photo, Marvin Jordan shakes tiny dacron fibers onto sheet, assisted by James Pardubsky. Karl Leonhard uses magnifying glass to check tufts in center photo.

Models of F-111 'Stores' 'Flown' in Wind Tunnel

Small models of "stores," or the tanks and missiles carried by F-111 aircraft, are being dropped from a 1/24th scale model of the plane in Convair's high speed wind tunnel in a continuing flight safety study.

The tunnel tests conducted by Convair for Fort Worth division determine the path of separation and the trajectory of the weapon. Results will be used to establish the safest conditions for full-scale drops.

A safe drop of each configuration, under dynamically similar conditions, must be demonstrated in the Convair wind tunnel prior to full-scale flight testing on an F-111.

The test program has been in progress over the last several years during the development of the F-111. Present part of the series, involving 100 drops, will be completed this week.

The models, ranging in size from 3 to 12 inches long, are pushed away from the model F-111 with an ejection force equivalent to that of a full-scale missile when dropped from an actual plane. Drops are made at all conditions of the F-111's entire flight envelope — from subsonic to supersonic speed and from sea level to maximum altitude. Also, the different types are dropped in various combinations.

The path at separation and the trajectory are recorded on two 16mm movie cameras operating at 400 frames per second. Data is also recorded on video tape for a quick look at test results. Film data is reduced through a film reader and an IBM computer system. Fort Worth division will use data in a full-scale prediction program.

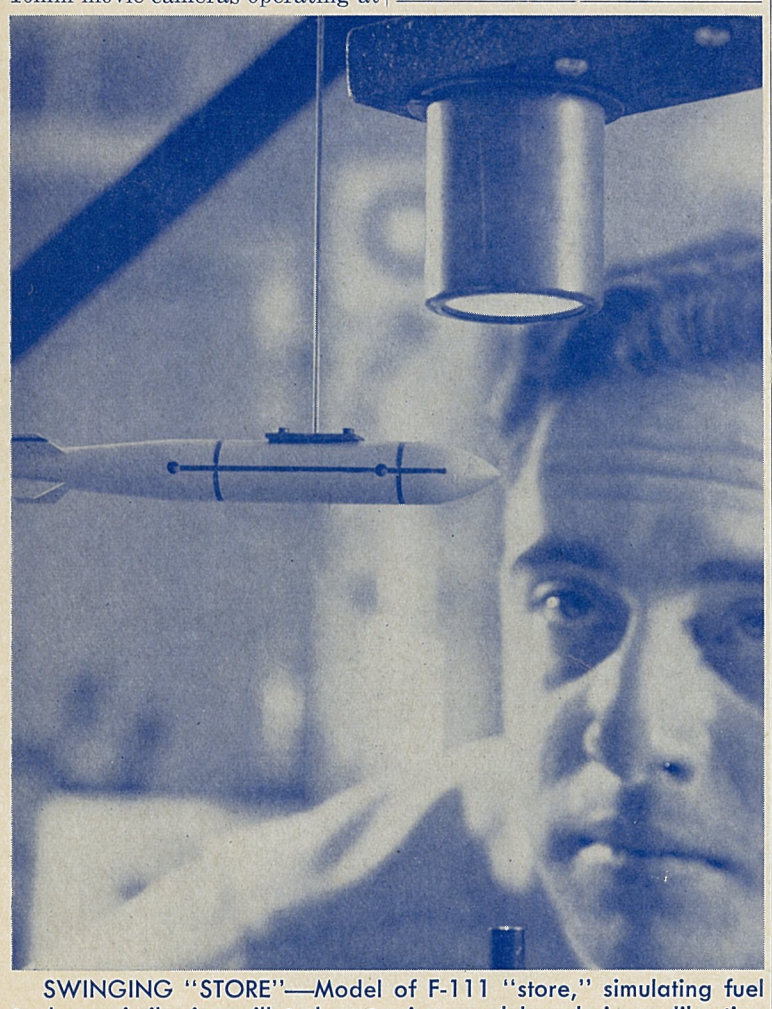
So far, 200 to 300 models of 24 different configurations have been designed by Convair's aerospace lab design group and built in Convair machine shop and Electronics-SD fabrication. Models are designed to the inertial mass properties of full-scale fuel tanks or missiles to provide accurate test data. Ed Collins and John Beard were lead engineers on the design project.

Star II Completes Operations in Gulf

The research submarine Star II, owned and operated by Electric Boat division of General Dynamics, has been assigned to the Company's Marine Technology Center in San Diego where it will be based for several months.

Star II recently completed three months of operation in the Gulf of Mexico where it was used for pipeline, wellhead, and platform inspection by several major oil companies.

Several research projects are scheduled for Star II during its stay in San Diego.



SWINGING "STORE"—Model of F-111 "store," simulating fuel tank or missile, is oscillated on torsion pendulum during calibration by Tito Salzman of Convair aerospace lab design group. Model stores are dropped from scale model F-111 in wind tunnel tests to determine separation path.

Dr. McCann Named To Corp. Position In Health, Safety

John P. McCann, MD, chief of aerospace medicine for Convair division's life sciences Dept. 592-0, is being transferred to New York Headquarters where he will have Corporate responsibilities for health and safety.

Dr. McCann

He assumed his new duties this week.

Dr. McCann, a retired Air Force colonel and former deputy surgeon of the USAF Air Training Command, will spend part of his time in San Diego for the next six months, assisting with a Convair study for the AF Aerospace Medical Division.

New Type Insulation Developed For Space

Superfloc, a new high performance insulation developed by Convair's thermodynamics cryogenic group (Dept. 584-0), has been found in division-conducted tests to have better performance characteristics than any other known insulation for use in long-term storage of cryogenic fuels in space.

The insulation consists of layers of thin sheets of aluminized mylar "radiation shields" flocked with tiny 1/16-inch-diameter tufts of white dacron fibers. The dacron-fiber tufts, arranged in a triangular pattern, are ⅜-inch apart and "stand" about .040-inch above the mylar base.

The tufts have very low heat conductivity and separate adequately the layers of mylar so that helium can be pumped through the insulation, expelling oxygen or other contaminants that could freeze and reduce effectiveness.

By reducing fuel loss, use of the lightweight insulation on nuclear-stage or other large space vehicles could reduce the amount of fuel required and as a result achieve a weight improvement, Karl E. Leonhard, Dept. 584-0 design specialist, indicated.

As much as two million square feet of Superfloc in 200 or more layers could be used for insulating liquid hydrogen or other high-energy cryogenic fuels for future space vehicle flights of several months or years duration.

Production of 5,000 square feet of Superfloc, in 65 20-by-4-foot sheets, was completed by Convair last month under a contract from NASA's Marshall Space Flight Center in Huntsville, Ala.

R. E. Tatro, Convair thermodynamics group engineer, said NASA scientists will compare the Superfloc with NRC-2, SI-62 and other existing types of insulation.

Dept. 491-0 manufacturing development engineers designed the production equipment and produced the Superfloc for NASA testing. They were Henry Kobrich, Gerald Peddie, Marvin Jordan, Frank Bench, James Pardubsky. Charles Ogle of Dept. 572-1 and Frederic Yochim, a Dept. 454-0 plastics mixer, also assisted.

Personnel from Dept. 454-0's wood mock-up area, under the direction of William R. Walker, foreman, and C. Robert Clark, leadman, constructed the vibrator, tables and drying racks for production use.

Dry Immersion Bed Developed At Convair Will Be Marketed

A dry immersion bed developed by Robert C. Armstrong, MD, manager of Convair division's life sciences Dept. 592-0, and used by the division in space medicine research studies is now being manufactured commercially by a Van Nuys, Calif., firm and is expected to have widespread use in hospitals and medical rehabilitation centers.

Patients using the bed lie on a waterproof sheet and remain dry while "floating" in water heated to body temperature. Because the patient is buoyantly supported, there is an infinite number of "pressure points" and minimum pressure on any single part of the body.

The bed will be used for patients in long-term bed confinement cases, such as those resulting from neurological damage, for prevention and treatment of pressure-produced skin ulcers. It also may be used for treatment of massive skin burns.

Neil Martin, Convair patent attorney, said Aqua-Rest of California is exclusive licensee for manufacturing the bed under an agreement in which General Dynamics and the inventor received an initial payment and will receive royalty on net sales. Martin and Stan Kerr, patent engineer, handled patent details.

The prototype bed, built by Convair, at last report had been in continuous use for treatment of patients at the University of Pennsylvania hospital rehabilitation center in Philadelphia since Sept. 17, 1965.

It was requested for use with a patient in critical condition there after a member of the hospital staff saw it demonstrated at an Aerospace Medical Association technical symposium in New York.

The bed is equipped with a heating element and water circulation system and has a motor-driven internal structure that can be raised and lowered to facilitate patient transfer or for tilting.

Convair life sciences personnel built two of the beds for use in research on metabolic rates of "astronauts" under simulated weightless conditions, one of which is still available for use at Kearny Mesa.

The tests were conducted by W. A. Shafer, MD, and John McCann, MD. Ernie Casco assisted with design drawings and Richard Wolf and George Gill with fabrication.

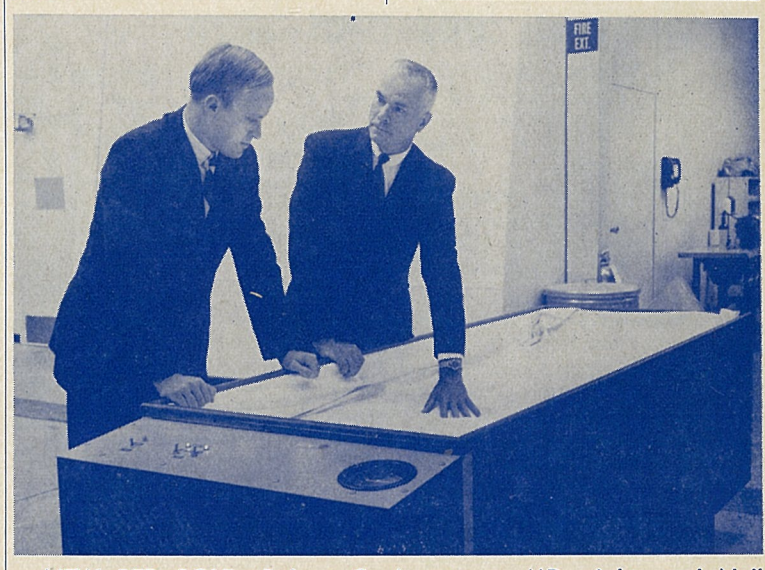
Aqua-Rest of California has constructed three beds of the design it will market — featuring fiberglass rather than wood construction. One is currently being tested by Underwriters Laboratories.

Advanced Degrees Awarded to Four

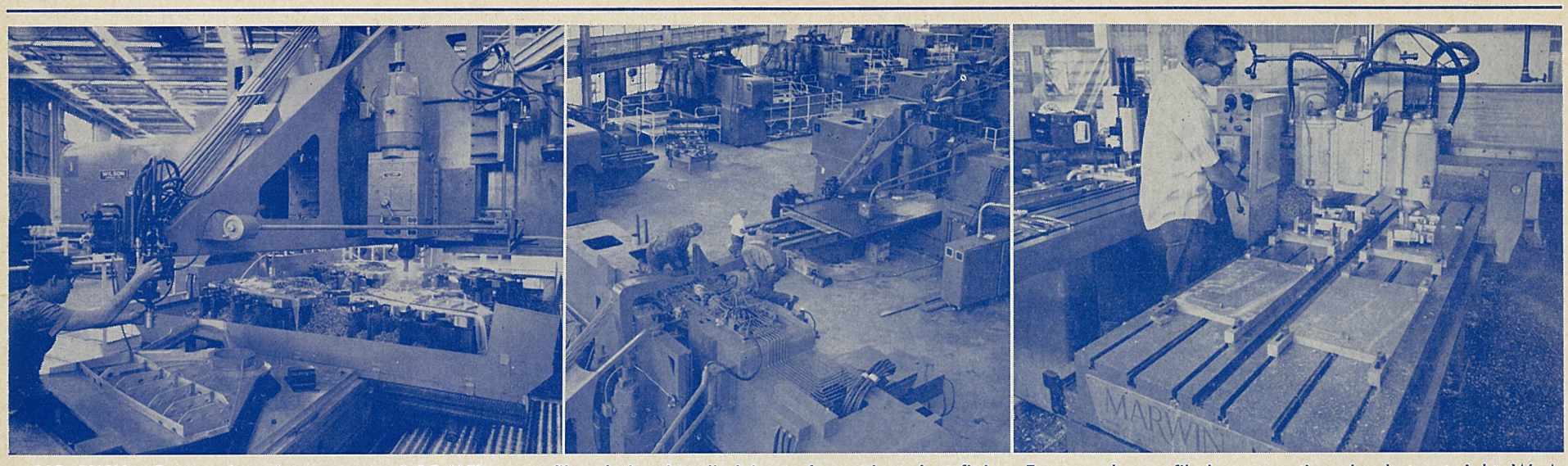
Four Fort Worth men received advanced degrees from Southern Methodist University recently in the SMUTCU Graduate Engineering program.

G. L. Bowman and G. C. Coffman, Dept. 63-4, received master's degrees in civil engineering.

J. A. Bourgeois, Dept. 62-3 and C. R. Woodbury, 62-6, earned master's degrees in electrical engineering.



NEW BED ROLE—Robert C. Armstrong, MD, right, and Neil Martin, patent attorney, discuss dry immersion bed developed at Convair for use in space medicine studies. It has been licensed for commercial production for use in hospitals and medical rehabilitation centers.



BIG PUSH—Center shot shows some of 15 Wilson profilers being installed in Bldg. 1 at AF Plant 19 for profiling of F-111 parts. At left, J. R. Price sets machine for cutting pivot fitting. Four can be profiled at same time. In photo at right, W. A. Bowell operates one of new routers going into Bldg. 1 for work on F-111 parts.

Protective Cover Design Wins National Exposition Honors

Protective covers designed by Convair division for in-plant protection of thin-wall stainless steel expansion bellows on Atlas launch vehicles won the honorable mention (fourth place) material handling award at the 19th annual Society of Packaging and Handling Engineers (SPHE) conference and exposition Oct. 17-19 in Dayton, Ohio.

Each of the versatile covers consists of a formed, hard, two-piece plastic shell and an inflatable plastic bladder lined with polyurethane foam. The device is held in position by two straps of nylon tape.

The covers adjust to fit various sizes of bellows and have a unique ability to conform to irregular surface configurations when inflated.

Robert J. Vogler Jr. and Donald E. McMurtrey, Dept. 493-0 materials handling and packaging engineers, said use of the new protective covers in three different sizes will save Convair an estimated $38,821 a year — largely through elimination of damage rework and scrappage.

McMurtrey said the new covers have proved extremely effective in eliminating damage during Atlas vehicle fabrication and modification.

Protection is needed for 10 to 15 bellows of various sizes and shapes on each launch vehicle, depending upon vehicle configuration. The bellows carry liquid propellants during flight.

"Use of the air-filled cover provides enough protection that a worker can stand on it without damage to the bellows," Vogler said. "If an accidental puncture permits the internal air to escape, the polyurethane foam still provides needed protection."

Entries in the national contest were judged on ingenuity, production cost reduction, safety and methods.

"Winning was quite an honor," Vogler said, "as we were competing against new material handling developments from many different industries."

A WINNER—D. E. McMurtrey, left, and R. J. Vogler Jr. examine versatile Atlas launch vehicle bellows covers that won award for Convair division at National Society of Packaging and Handling Engineers exposition.

Sheet Metal Facility OKd

Plans were approved late last month for establishing a major sheet metal fabrication facility at Electro Dynamic division, Avenel, N. J.

The facility, representing an investment of more than a half-million dollars, has been designed for the production of sheet metal components for electrical and electronic equipment.

"This is our first major move directed toward expansion of our facilities and capabilities and specifically satisfies one of the most important 1968 objectives involved in our five-year growth plan," stated Herman H. Hanink, general manager.

"It signifies a vote of confidence by the Corporation in our capability for supporting a program of this size and importance."

As a part of this move a five-phase rearrangement of plant facilities will be undertaken to improve overall efficiency of operation.

S-C and Electronics Raise Bond Buying

Electronics-SD and Stromberg-Carlson Data Products both increased percentages of employes purchasing U.S. Savings Bonds during recent drives at San Diego facilities.

Data Products now has 406 buying bonds through payroll deduction, or 57.2 per cent of total employment.

Electronics-SD has 232 salaried and 222 hourly people saving through regular bond purchases, a total of 53 per cent of population.

New F-111 Machinery Installed at Pl. 19

Production area in Air Force Plant 19 at Convair is fast filling with profilers and routers for assist work on F-111 components.

Fifteen large Wilson profiling machines will occupy the northeast side of Bldg. 1 when installation is completed next spring. There are at present five profilers in operation. One other is being tooled and four more are being set up.

Seventeen English-made routers already have been installed and are in operation in the center of the building, in the area adjacent to the profiling section. Three others are presently being installed, five more are on order from England and are expected in plant shortly after the first of the year.

Both the profiling and routing operations at Plant 19 are part of the Lindbergh Field plant machine shop under the direction of O. C. Banke, general foreman.

Twelve of the large Wilson profiling machines will be profiling the huge wing pivot fittings for the F-111, two will be put to profiling longerons; and one to profiling pivot and fixed pylon details.

Patterns are traced with hydraulically-controlled 3D tracers. Although each of the machines is equipped with six spindles, only four can be used at one time during pivot fitting profiling because of the size of the parts. Bed of the machines is 10x18 feet.

Key operators, V. D. Bailiff and Leon Stallings, together with R. L. Williams, assistant foreman, were sent to Canadair Limited for training on the machines. Canadair is using Wilson profilers, also on F-111 parts. These operators, in turn, are training other operators as the equipment goes into use at Convair.

Saturn Tracked By AIS Ships

Each of three Apollo Instrumentation Ships constructed at Quincy division tracked Saturn 5 and recorded data from the man-to-the-moon rocket during its maiden flight Nov. 9.

USNS Vanguard was the only one of the trio actually deployed in mission support and she earned the compliments of the National Aeronautics and Space Administration for excellent performance.

Although not assigned to Saturn 5 mission support, USNS Redstone and USNS Mercury also tracked the rocket and recorded data.

Vanguard was stationed approximately 1,000 miles down range, off Bermuda. Both her equipment and computer programs were described as having performed according to plan and Vanguard was called "a real good ship."

C. R. Walker, AIS program director, telegraphed congratulations to Capt. Tjerand Snik and the ship's crew and instrumentation crew for Vanguard's excellent performance on her first mission.

Redstone was at Port Canaveral, Florida and Mercury at the Quincy division shipyard during the mission. Mercury tracked Saturn 5 with her telemetry antenna and recorded information during two orbits.

Electro Dynamic to Take Part In Chemical Industries Show

Electro Dynamic division will participate in the Chemical Industries Show scheduled for the New York Coliseum, Nov. 27 through Dec. 2.

Occupying booth number 3068, ED will display its line of AC electric motors and Dynapure (Oil and Mist Filtration System).

Featured among the AC line will be a submersible motor illustrating unique insulation capabilities that enable the motor to operate successfully even when submerged in foreign liquids.

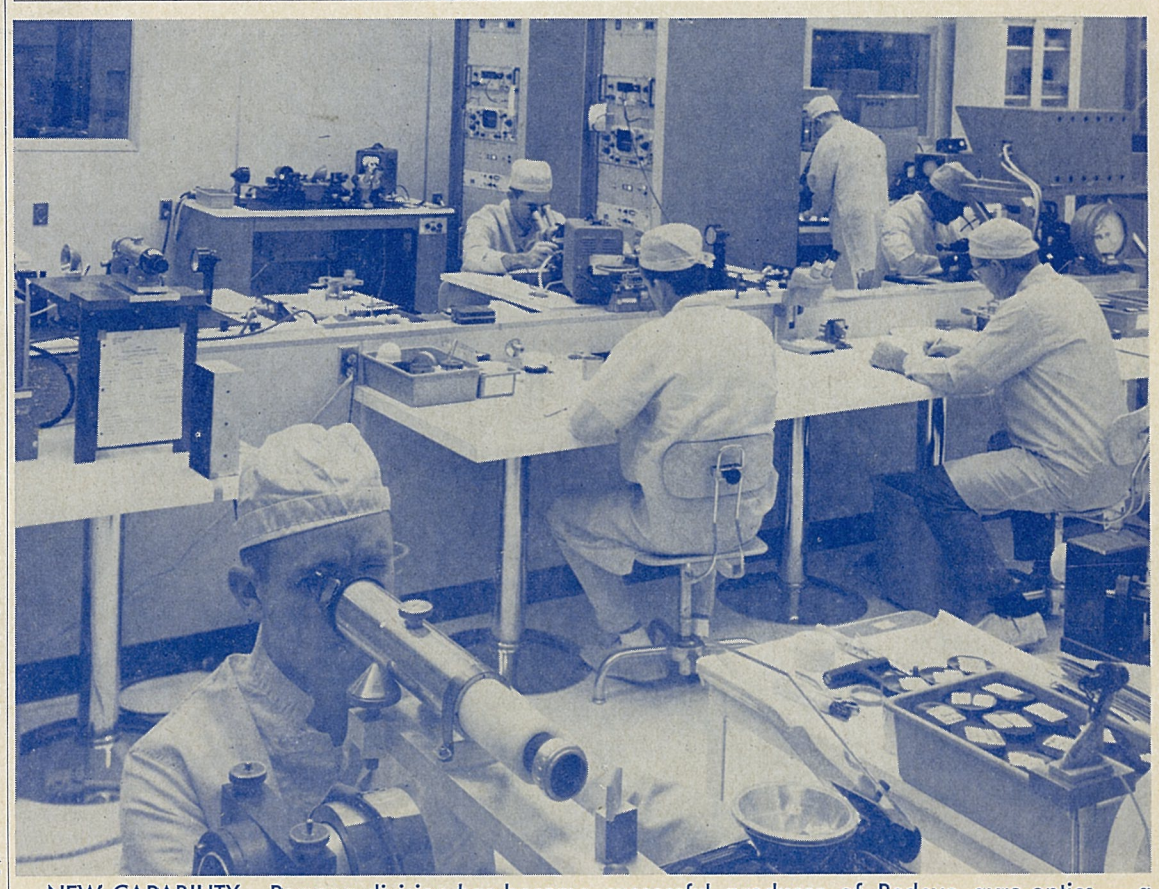
Also on display, will be a 680 series cast iron frame showing Electro Dynamic's building block capabilities by converting the machine from a dripproof to a Weather-Protected Type II motor from pulley end to front end, and a large 1750 hp vertical solid shaft high thrust Weather-Protected Type I motor.

Dynapure Mist Filtration System to be shown removes unwanted air suspensions resulting from manufacturing and processing operations where they are formed. Unless filtered out, mist particles otherwise find their way into the plant atmosphere, creating health hazards.

Development of the Dynapure System is an outgrowth of Electro Dynamic's experience in building mist elimination systems for the U.S. Navy for its nuclear submarines.

Aaron Murray Heads Photographers Group

Aaron Murray of Fort Worth was installed as president of Texas Industrial Photographers Association recently. B. D. Williams, Dept. 17-4, will serve on the by-laws committee.



NEW CAPABILITY—Pomona division has become successful producer of Redeye gyro-optics — a precision instrument with extremely close tolerance bearings and parts coupled with precision optics. Assembly and test are performed in rigidly controlled clean rooms to protect assembly from contamination by dust or moisture.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 23 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, November 15, 1967

CLAUDIA AND FRIENDS—Claudia Pierson, secretary in Pomona division's Standard ARM office at Convair, has her choice of big birds at McGowan's Turkey Ranch near San Diego in preparation for Thanksgiving feast, Nov. 23.

TURKEY TRYOUT—Chefs William Koers, left, and Joe Singletary, right, prepare to show their carving skill as Gil Hutter, Prophet Co. cafeteria manager at Kearny Mesa, observes. Convair cafeterias will serve complete turkey dinner Nov. 21 for $1.10.

Con-Trib Participation Upped to 89 Per Cent

Eighty-nine per cent of Convair division's 13,717 employes are participating in the Convair Employes' Con-Trib-Club following a recent two-week membership campaign.

James K. Field, chief of employe services, said Con-Trib-Club expects to receive an estimated $509,500 through payroll deduction contributions from members during the coming year.

The Con-Trib committee, at its Nov. 2 meeting, pledged $300,000 to United Community Services of San Diego, payable in 12 monthly installments, for support of more than 75 UCS-funded community health, welfare, youth and family service organizations.

Convair employes, through Con-Trib, traditionally have been the single largest contributor to UCS. This year's pledge was an increase of $50,000 over last year's gift and was based on added giving pledged by employes in the recent campaign.

Con-Trib-Club's tentative bud-

(Continued on Page 2)

Holidays to Create Four-Day Weekends

General Dynamics people at divisions located in California will enjoy four-day weekends observing Thanksgiving and year-end holidays.

Convair, Electronics-SD, Pomona division, Stromberg-Carlson Data Products will have Thursday and Friday of next week, Nov. 23 and 24, as Thanksgiving holidays.

Employes at all plants of these General Dynamics divisions will have Dec. 25 and 26, Monday and Tuesday, off at Christmas and Jan. 1 and 2, for the New Year's holiday.

Atlas-Centaur Sends Surveyor On Way to Moon

Convair's Atlas-Centaur 14 started Surveyor 6 on its way to the moon Nov. 7 with such precision the spacecraft would have landed within 60 nautical miles of its target with no mid-course correction.

The spacecraft was the third in the Surveyor series targeted for landing on the rugged Sinus Medii near the center of the moon's visible face. Surveyors 2 and 4, though successfully launched, failed to achieve successful landings.

Convair's Atlas SLV-3C No. 5902 booster lifted Centaur 11D and Surveyor 6 from Complex 36-B at the Eastern Test Range in the AC-14 flight. After Atlas separation 4.1 minutes later, Centaur's liquid hydrogen engines were fired for a 5.39-minute "first burn," followed by a 12.8-minute orbital coast and a 1.9-minute "second burn" of the Centaur engines.

The Surveyor's landing legs and antennas were extended and the spacecraft separated from the Centaur about 25½ minutes after liftoff. The Centaur then was turned and its orbital path altered by "blowdown" of residual propellants.

Present for the launch were Grant Hansen, Convair vice president-launch vehicle programs; Deane Davis, Centaur program manager; Andrew Kalitinsky, director of launch vehicle programs engineering; and E. E. Barringer, AC-14 project engineer. Daniel Sarokon was launch conductor.

"We had a normal countdown

(Continued on Page 2)

S-C and Electronics Raise Bond Buying

Electronics-SD and Stromberg-Carlson Data Products both increased percentages of employes purchasing U.S. Savings Bonds during recent drives at San Diego facilities.

Data Products now has 406 buying bonds through payroll deduction, or 57.2 per cent of total employment.

Electronics-SD has 232 salaried and 222 hourly people saving through regular bond purchases, a total of 53 per cent of population.

Performance on C-5 Program Wins Praise

Convair's performance on the C-5 program has been praised by Lockheed-Georgia Co. as "outstanding."

H. Lee Poore, Lockheed-Georgia vice president, in a recent letter to Jack L. Bowers, Convair division manager, said:

"At the beginning of the C-5 program, we expressed the thought that although the challenges in such a gigantic program were great, the opportunities loomed even greater. In this, our faith is stronger today than ever before.

"With the successful completion of the first C-5 empennage, Convair has met and faced its challenge in a manner that you and all your personnel can justly be proud. Convair has continued its fine tradition of delivering a quality product on schedule and has again earned Lockheed's sincere gratitude. Please convey my personal thanks to Bob Miller (Convair C-5 program manager) and all the other fine Convair employes involved in our program.

"Now Lockheed squarely faces its challenges of final assembly, roll-out, and successfully flight testing the C-5. With outstanding subcontractor performance such as demonstrated by Convair, we feel certain the outcome will be a happy one."

★ ★ ★

SECOND EMPENNAGE GOES TO LOCKHEED

Second C-5A empennage built at Convair division arrived at Lockheed-Georgia Co., Marietta, Ga., on Oct. 26. This second article will be used for static tests.

Assembly of the vertical stabilizer box structure for the third empennage has been completed and will be delivered this week to Convair structures test laboratory for stiffness testing. The horizontal stabilizer box structure will go to the Harbor Drive facility later this month for similar testing.

Assembly of the first Air Force C-5A is under way at Lockheed's Georgia plant. The initial aircraft is scheduled for completion early next year.

The three fuselage sections were the first large structural parts to be joined. The sections —forward, mid, and aft—measure 78 ft., 10.; 53 ft., 2 in; and 96 ft., 4 in., respectively.

The C-5 will be capable of air-

(Continued on Page 6)

SLV-3 Performance Perfect In NASA Satellite Launch

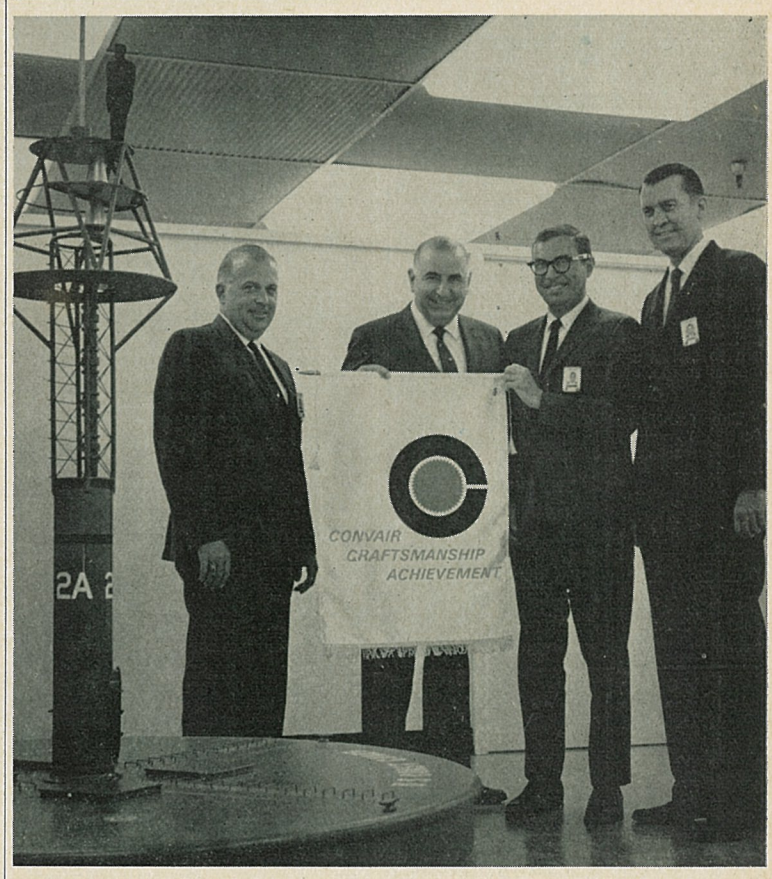
Perfect performance by Convair's Atlas SLV-3 No. 5103 and two "burns" of an Agena second-stage vehicle sent NASA's third Applications Technology Satellite into space Nov. 5 from Complex 12 at the Eastern Test Range.

The 850-pound, spin-stabilized satellite, built by Hughes Aircraft Co. for NASA's Goddard Space Flight Center, has been "parked" for five years of operation in synchronous orbit 22,300 miles over the Atlantic Ocean near the mouth of the Amazon River off South America.

Thomas Chitty was Convair launch conductor with William Apfel as assistant. James L. Minos was program manager for the booster.

Richard W. Keehn, Atlas program manager, was present for the launch.

ATS-3 carries 18 experiments to provide practical benefits from space technology, including a spin-scan cloud camera to take color photos encompassing one-third of the earth's surface.



BANNER WINNER—Robert Devereux, program manager, second from right, accepts Craftsmanship Achievement banner from Paul Ferrara, director of engineering administration and services, for ocean data station program as top engineering group for third quarter of year. W. T. Dorrance, director of special programs, is at far left and D. G. Moody, ocean data station assistant program manager, at far right, with model of Coast Guard buoy in foreground.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Nov. 1 and Nov. 15.

Thirty-year: Dept. 001, H. A. Mohr; 015, L. M. Persing; 031, M. O. Sage; 400, F. O. Jones, L. L. Stabenau.

Twenty-five-year: Dept. 019, J. H. Harris; 031, O. W. Bell; 045, E. Villegas; 300, C. M. Craig; 401, A. L. Simpson; 531, J. G. Hamilton; 717, O. L. Riddle; 744, H. C. Medearis; 820, C. E. Taylor; 840, T. E. Becht; 842, T. Salazar.

Twenty-year: Dept. 016, C. R. Mikula; 027, C. W. Brink; 057, W. W. Fenton; 059, C. T. Nash; 144, E. E. Franke; 300, Nettie F. Mussen; 598, N. H. Van Dorn; 831, H. A. Jennings, T. R. Packer Jr.; 860, E. J. Rasp; 967, L. W. Marr.

Fifteen-year: Dept. 002, Barbara J. Rogers; 015, D. L. Young; 019, J. T. Whitfield; 031, L. C. Ferguson, L. E. Swoboda; 059, H. G. Easter Jr.; 113, R. J. Williams; 130, R. M. Oldham; 143, Miriam Newnum; 420, L. J. Lindgren; 451, R. M. Hill; 519, J. J. Miller; 524, Dorothy E. Hobson; 544, R. F. Hollings; 588, R. E. Johnston; 589, R. J. Reid; 731, A. W. Rasco; 744, W. T. Roberts; 756, V. L. Ogle Jr.; 833, A. H. Hanson; 957, L. E. Sadler.

Ten-year: Dept. 059, W. F. Batie, C. R. Lowe; 130, E. A. Gilbert; 143, J. J. Corbett; 250, H. Cook; 516, R. Montague; 519, E. Minette; 524, Helen H. Richter; 551, A. Favors; 566, R. G. Ainsworth; 780, E. C. Olsen; 835, D. E. Guilford; 955, Arlene Barnhard; 979, K. L. Loynes; 985, C. I. Moran.

ELECTRONICS

Fifteen-year: Dept. 424, R. F. Narvaez Jr.; 712, J. R. Austin.

Ten-year: Dept. 513, M. C. Hook.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Oct. 27:

Dept. 001-0, P. E. Cox; 002-0, G. Pfeifer, B. J. Rogers; 015-0, L. J. Kelly, W. G. Wells; 016-0, M. G. Mercer; 027-0, P. W. Byrd, E. E. Landry; 031-0, F. O. Peterson, F. J. Stolte; 059-7, F. Aguero; 130-1, R. B. Purdy; 142-1, N. B. Forsberg; 144-1, H. C. Cox, G. R. Gray, H. H. Mishler; 144-2, N. J. Belik; 146-2, R. F. Hild; 149-7, R. D. Murphy; 250-1, C. J. Collins, J. S. Poschman, R. R. Russell, R. D. Whaley; 250-2, B. L. Keim; 250-3, M. E. Hall Jr.; 454-0, M. Nash; 542-0, R. M. Henkel; 543-1, J. F. Peterson; 578-5, K. W. Swant (two awards); 715-0, J. A. Pinson; 732-0, H. C. Cunningham, F. M. Heaton; 733-0, E. E. Portillo; 780-2, J. J. Ballatore; 840-0, M. F. Gonzales; 842-0, A. B. Gray; 860-0, C. Lent; 979-3, R. Pelletier.

EASTERN TEST RANGE

Dept. 979-1, W. A. Wilson.

Employe Suggestion awards approved for the week ending Nov. 3.

Dept. 002-0, C. W. Johnson; 015-0, L. W. Kirkendall; 019-0, R. V. Lucero; 020-0, W. Ratliff; 049-0, W. R. Panke; 059-1, S. J. Sorokie; 142-1, C. L. Cheves; 143-3, F. A. Baugh, H. A. Jackson; 144-1, M. L. Jamison, C. L. Witkowski; 144-2, M. J. Sorg; 401-5, J. E. Strachan; 515-0, N. A. Brown; 532-2, A. L. Willson; 574-4, J. D. Anderson; 578-3, J. J. Krehbiel, J. A. Parsons, C. A. Young; 732-0, H. L. DeWitt; 733-1, H. Staten Jr.; 763-1, R. P. Armenta, W. B. Haney; 833-2, J. Giamanco; 840-2, L. H. Kramer, E. V. Tieszen; 965-1, P. J. Swanson.

EASTERN TEST RANGE

Dept. 979-2, R. W. Sather.

VANDENBERG AFB

Dept. 985-1, J. E. Jones; 985-3, J. F. Strazz.

Invention Disclosures

CONVAIR

BAYER—M. C., Dept. 561-0. General Purpose Precision Switch and Electro-Capillary Welding.

BRADY—M. C., Dept. 578-4. Mass/Angle Differential Pressure Gauge/Calibrator.

HERSH—M. S., Dept. 572-2. Use of Diffusion Barrier Foils in the Manufacture of Composite Material Sheets.

ROGERS—S., Dept. 595-0. Suppression of Capacitive Cross Talk in Matrix Switches.

STROMBERG-CARLSON

HOLLETT—K. J., Dept. 8910. Submersible Propulsion and Guidance System for SCUBA.

Personals

CONVAIR

We wish to express our sincere thanks for the kindness and sympathy shown us in the death of our beloved husband, father and son—Clarence Thomas "Red" Boyle.

Mrs. C. T. Boyle, Tom and Connie
Mr. and Mrs. C. F. Boyle

* * *

I wish to express my heartfelt appreciation to all of my kind Convair friends who joined in giving me the lovely party and wonderful gift of an electric typewriter upon my retirement. I cannot begin to tell you what your thoughtfulness means to me.

Lucille Metcalf

* * *

The family of Charles Emil Wieher (retired) gratefully acknowledges your kind expressions of sympathy following his death.

The Wieher Family.

Deaths

CONVAIR

FARMER—Archie A. Jr., Dept. 551-2. Died Nov. 3. Survivors include two children, Jeffeory and Roxanne.

LUND—George, Dept. 031-0. Died suddenly Nov. 2. Survivors include his wife, Frances.

General Dynamics News

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Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Papers Presented

CONVAIR

LUKENS—D. R., Dept. 966-7. "Full Scale Testing for Flight Control Parameters." SAE/Combined Meeting No. 3, SAE Committee A-6 Aerospace Power Technologies and Subcommittees, Oct. 16-20.

PERUN—K. R., Dept. 572-2. "Diffusion Welding and Brazing of Titanium 6 al-4v—Process Development." American Welding Society's National Fall Meeting, Houston, Texas, Oct. 2-5.

SHUMWAY—G. R., Dept. 565-2, "Vendor Control, Management of Supplier, Data Configuration and Traceability," ASTME Meeting, Huntsville, Ala., Oct. 19-20.

STEADMAN—J. W., Dept. 592-0. "Development of an Underwater Bio-Telemetry System. International Foundation of Telemetering/International Telemetering Conference, Washington, D.C., Oct. 2-4.

STEPHENS—Paul, Dept. 584-0. "Characteristics of Seven Liquid Post Boost Propulsion Systems." Interagency Chemical Rocket Propulsion Group/9th Liquid Propulsion Symposium, St. Louis, Mo., Oct. 25-27.

YAGER—E. K., Dept. 507-0. "Techniques of Multiple Pressure Measurement in Wind Tunnels." National Bureau of Standards/Fifth Transducer Workshop, TWG, Gaithersburg, Md., Oct. 3.

Papers presented at AIME Fall Meeting, Cleveland, Ohio, Oct. 16-20:

ADSIT—N. R., Dept. 572-1. "Grain Boundary Sliding in Zinc and Zinc-Copper Bicrystals."

WEISINGER — M. D., Dept. 572-2. "Machining of New Composite Materials."

Papers presented at AIAA Fourth Annual Meeting and Technical Display, Anaheim, Calif., Oct. 23-27:

BURNETT—J. R. and G. L. DRAKE, Dept. 592-0. "Contributions of a Developmental Integrated Regenerable Life Support System to the Aerospace Technology."

JONES—D. J., Dept. 581-6. "The Orbital Research Hospital."

NEWSOM—B. D., Dept. 592-0. "A Concept for Integration of the Physiological Research Measurements to be Made in Space."

Papers presented at IEEE/EASTCON 1967 Electronics and Aerospace Systems Tech. Convention, Washington, D.C., Oct. 16-18:

BOYCE—G. D., Dept. 967-7. "Digital Measurement of FM Deviation."

GARRIOTT—Ray and C. HATCHETT, Dept. 541-0. "In-Space Pattern Measurement Techniques for Large Aperature Antennas."

Papers presented at SAE/Aeronautics & Space Engineering Meeting, Los Angeles, Oct. 2-6:

DRAKE—G. L. and J. R. BURNETT, Dept. 592-0. "Selection of an Oxygen Regenerating System to Meet the Demands of a Multi-Mission Program."

GREEN—E. D., Dept. 491-0. "Solid State Welding System for Structural Titanium Components."

HANDWERKER—B. J., Dept. 493-0. "The Effects of Larger Sheets, Forgings, Castings and Extrusions in Receiving, Storage, and Transportation. Area and Equipment Requirements Volume and Flow of These Materials Through the Fabrication Shop."

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Monday, Nov. 20. Lindbergh Field, ext. 491, Bldg. 14 auditorium, first shift, 8 a.m., Tuesdays, Nov. 28 and Dec. 12; second shift, 4:30 p.m., Tuesday, Dec. 5. AF Plant 19, ext. 491 LF, Bldg. 3, 1st mezz, Col. B-14 conference room, 8 a.m., Thursdays, Nov. 16 and Dec. 14.

PROFESSIONAL/TECHNICAL

DAMAGE PREVENTION — Lindbergh Field, first shift, Wednesdays and Thursdays, 8-9 and 10-11 a.m., Nov. 15 and 16, Bldg. 14 auditorium. For information call W. F. Weidenfeller, ext. 1931 KM.

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Educational services office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Patents Issued

STROMBERG-CARLSON

COMPTON—ROBERT, FRED HERMANN, and ROGER STEADMAN. U.S. Patent 3,340,420 for cathode ray tube control circuitry utilizing two accelerating windings.

CORPEW—Charles. U. S. Patent 3,340,418 for a phase reversing control circuit for nullifying the effect of AC transients in a cathode ray tube.

HAMANN—Fred. U. S. Patent 3,331,985 on a character generating system utilizing a CRT in which a portion of a plurality of electron beams are selectively defocused to form a character.

Retirements

CONVAIR

DE HEUS—Anthony, Dept. 027. Seniority date April 17, 1953, retired Oct. 27.

EVANS—Lew M., Dept. 979-5. Seniority date April 14, 1952, retired Sept. 29.

HALSHAW—Elsie G., Dept. 833-2. Seniority date Jan. 3, 1951, retired Oct. 31.

HAYWOOD—Fred W., Dept. 144-1. Seniority date Jan. 24, 1961, retired Oct. 27.

HIGGINS—James W., Dept. 833-2. Seniority date June 16, 1961, retired Oct. 29.

KING—Ann S., Dept. 130-5. Seniority date April 9, 1951, retired Oct. 31.

KLEIN—Kurt, Dept. 041-0. Seniority Aug. 8, 1928, retired Oct. 31.

McEWEN—Dorothy F., Dept. 146-3. Seniority date March 14, 1951, retired Oct. 20.

McLEAN—Murdock A., Dept. 250-0. Seniority date Feb. 3, 1941, retired Oct. 31.

METCALF—Lucille F., Dept. 149-0. Seniority date Feb. 10, 1925, retired Oct. 27.

PETERSON—Charles W., Dept. 731-0. Seniority date Sept. 9, 1958, retired Oct. 31.

PHILLIPS—Carl, Dept. 832-3. Seniority date April 23, 1956, retired Oct. 31.

PRIOR—Alberta M., Dept. 521-6. Seniority date Oct. 23, 1956, retired Nov. 3.

SCHULTZ—Daniel J., Dept. 144-2. Seniority date April 3, 1957, retired Oct. 13.

THOMAS—Cyril P., Dept. 401-5. Seniority date July 18, 1940, retired Oct. 31.

THOMAS—William H., Dept. 300 (Convair Service Center). Seniority date April 23, 1953, retired July 16.

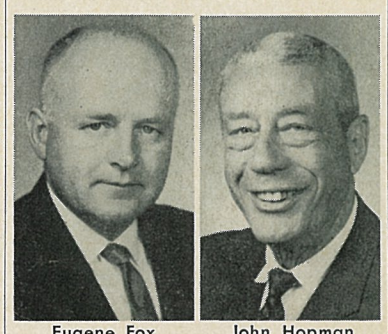
Fox, Hopman In New Roles In Ind. Rel.

New personnel assignments in Convair industrial relations and finance departments have been announced by Jack L. Bowers, division general manager.

Eugene Fox, manager of budgets-direct (Dept. 194-0) for the past five years, has been appointed assistant to the director of industrial relations, M. V. Wisdom. Fox is to fill an industrial relations managerial position after indoctrination.

John P. Hopman, a 35-year Convair veteran who recently has had a special assignment as assistant to the director of operations, has been appointed chief safety engineer (Dept. 130-8), reporting to Wisdom.

Fox became a budget analyst in the Convair division controller's office in 1956 and later served as a senior project budget



Eugene Fox John Hopman

analyst, estimating supervisor and budget supervisor before becoming manager of budgets-direct in 1962.

He first was employed from 1941 to 1943 in purchasing and production and production control departments. He served in the U. S. Army from 1943 to 1945, was graduated from USC in 1948 and was employed by the State Board of Equalization in San Diego from 1948 to 1956.

Hopman joined Consolidated Aircraft in Buffalo, N.Y., and came to San Diego with the firm in 1935.

He worked up through numerous factory positions to become factory superintendent. During World War II, he was works manager at Consolidated-Vultee's Elizabeth City and New Orleans divisions and at the Stinson division in Detroit.

Hopman was factory manager for the former Astronautics division when it opened in 1957 and became factory manager-assembly and fabrication in 1961. He had been assistant to the director of operations since last March.

B. J. Neal has been assigned as acting manager of budgets-direct, filling the position left by Fox.

Ross A. Evans, manager of personnel administration in the industrial relations department, and Jack W. Garrison, chief safety engineer, have submitted resignations.

Jack A. Croft, chief of educational services (Dept. 130-3), now reports directly to Wisdom.

Organizational Changes Made In Two Key Convair Depts.

Organizational changes in Convair division reliability control and launch vehicle programs:

Reliability control-product quality assurance (Dept. 143-0) and launch vehicle programs-quality control (Dept. 957-0) have been combined as Kearny Mesa plant reliability control (Dept. 143-0) with Fred R. Lee as manager. Lee reports directly to L. I. Medlock, director of reliability control.

Launch vehicle programs-reliability control (Dept. 958-0), consisting of reliability control engineering and off-site base support activities, is headed by B. B. Shaffer as manager. Shaffer reports directly to Grant L. Hansen, vice president-launch vehicle programs, and functionally to Kearny Mesa plant reliability control.

Reliability control-administration (Dept. 140-1), product effectiveness (Dept. 145-0) and launch vehicle programs-data evaluation records and delivery (Dept. 957-2) have been combined as reliability control support services (Dept. 140-1) with A. W. Reed as manager, reporting to Medlock.

Procurement quality assurance (Dept. 144-0) has been renamed procurement reliability control with R. S. Campbell as manager, reporting to Medlock.

Lindbergh Field plant reliability control (Dept. 149-0), including responsibility for Air Force Plant 19 reliability control, is headed by R. H. Gilliland as manager, reporting to Medlock.

Reliability and maintainability engineering (Dept. 145-1) and systems safety engineering (Dept. 145-1), report directly to Medlock.

Munson Appointed Systems Eng. Mgr.

New personnel assignments in Convair research and engineering, and military space programs:

Lloyd E. Munson has been appointed manager of systems engineering (Dept. 598-0), reporting to W. W. Fox, director of product design.

Charles E. Wilson has assumed responsibilities for Advanced ICBM systems engineering, reporting to C. S. Ames, vice president-military space programs.

Victor Hudson, chief of systems engineering for aircraft (Dept. 598-1) and W. G. Hardy, chief of systems engineering for missiles and spacecraft (Dept. 598-2), report to Munson. Robert M. Williams is on Munson's staff.

Con-Trib Participation Upped to 89 Per Cent

(Continued from Page 1)

get for the next year includes an additional $162,677 primarily for support of national health and community service organizations not receiving San Diego UCS funding. This includes $41,146 for agencies in areas where Convair has off-site employes.

An additional $46,836 is earmarked for the Emergency Aid Fund for assistance to employes and their families in distress.

Con-Trib campaign results show legal counsel and community relations employes with 100 per cent participation and market analysis and planning with 95 per cent. Contracts and military space programs followed closely with 94 per cent and material and industrial relations departments with 93.

Ninety-two per cent of research and engineering's 2,446 employes, 90 per cent of finance departments' 758 employes and 89 per cent of Lindbergh Field operations' 2,648 employes are participating.

Other departments and percentage of participants include reliability control and Eastern Test Range operations, 88; Vandenberg AFB operations, 87, and launch vehicle programs, 84.

Employe participation totaled 92 per cent at Lindbergh Field and 87 per cent at Kearny Mesa.

Highest percentage of Fair Share giving was in market analysis and planning.

In other recent action, the Con-Trib committee allocated $2,500 to the American Red Cross for purchase of Christmas "ditty bags" for servicemen in Viet Nam.

At request of employes at Vandenberg AFB, $200 was dispersed to the Muscular Dystrophy Association chapter in that area and $200 to the Santa Lucia Area Council of the Boy Scouts of America.

Atlas-Centaur Boosts Surveyor Toward Moon

(Continued from Page 1)

and no problems during the whole operation," Barringer said.

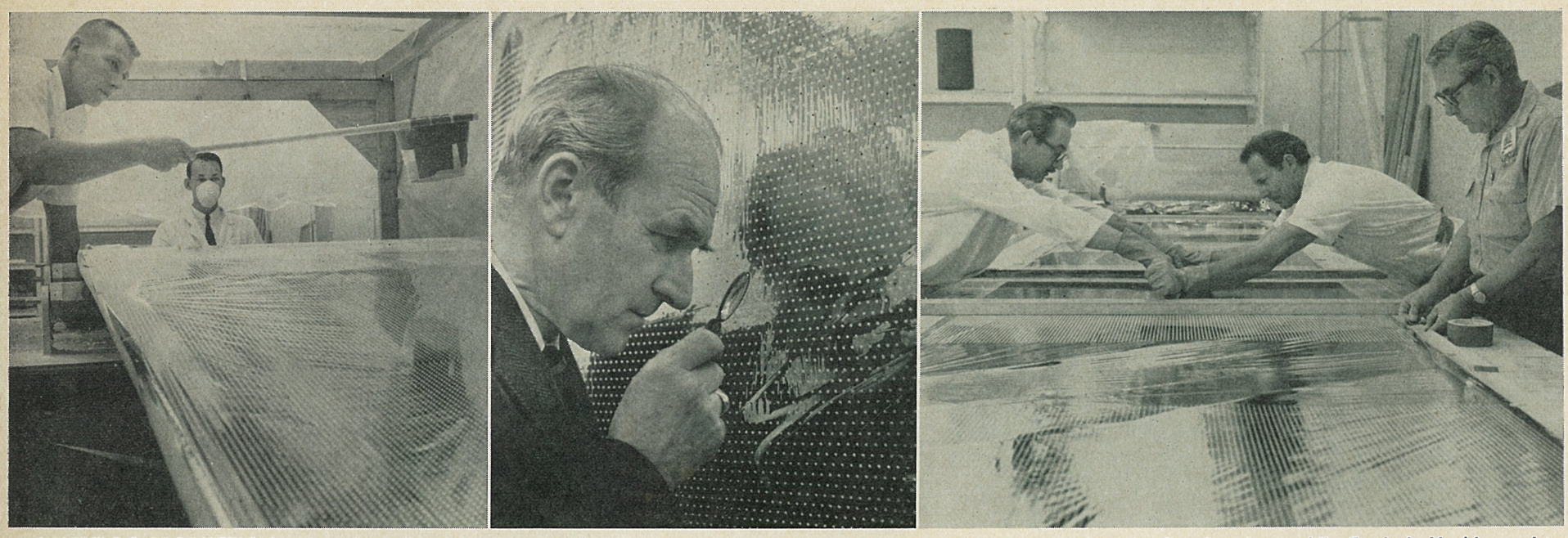
The Surveyor 6 mission was the third in which Centaur's capability to enter an earth parking-orbit before injecting the spacecraft into lunar transfer trajectory was utilized.

Surveyors 3 and 5 were launched with Centaur two-burn missions and Surveyors 1, 2 and 4 with single-burn, direct-ascent mode.

The Surveyor 6 launch also marked second use of Convair's improved and uprated new Atlas SLV-3C booster.

You Can Become Regular Bond Buyer For 50 Cents a Week

COMMENDATION—Convair Eastern Test Range management personnel display certificates of commendation received for cost reduction proposals that will save division approximately $60,000. From left are D. M. Williams, chief of reliability control; O. H. Reed, chief of launch operations; J. N. Freeman, chief of industrial relations; R. D. Beasley, chief of financial control; T. R. Henry, former chief of support services; and K. E. Newton, manager of Convair ETR operations. Convair ETR personnel received the monthly launch vehicle program's cost reduction trophy four times during the first eight months this year.



SUPERFLOC PRODUCTION—New Superfloc insulation created by Convair division for use with future cryogenic-fueled space vehicles is shown in production. In photo at right, Charles Ogle and Gerald Peddie use silk screen to apply liquid adhesive in flock pattern to aluminized mylar sheet while Frederic Yochim assists. In left photo, Marvin Jordan shakes tiny dacron fibers onto sheet, assisted by James Pardubsky. Karl Leonhard uses magnifying glass to check tufts in center photo.

Models of F-111 'Stores' 'Flown' in Wind Tunnel

Small models of "stores," or the tanks and missiles carried by F-111 aircraft, are being dropped from a 1/24th scale model of the plane in Convair's high speed wind tunnel in a continuing flight safety study.

The tunnel tests conducted by Convair for Fort Worth division determine the path of separation and the trajectory of the weapon. Results will be used to establish the safest conditions for full-scale drops.

A safe drop of each configuration, under dynamically similar conditions, must be demonstrated in the Convair wind tunnel prior to full-scale flight testing on an F-111.

The test program has been in progress over the last several years during the development of the F-111. Present part of the series, involving 100 drops, will be completed this week.

The models, ranging in size from 3 to 12 inches long, are pushed away from the model F-111 with an ejection force equivalent to that of a full-scale missile when dropped from an actual plane. Drops are made at all conditions of the F-111's entire flight envelope — from subsonic to supersonic speed and from sea level to maximum altitude. Also, the different types are dropped in various combinations.

The path at separation and the trajectory are recorded on two 16mm movie cameras operating at 400 frames per second. Data is also recorded on video tape for a quick look at test results. Film data is reduced through a film reader and an IBM computer system. Fort Worth division will use data in a full-scale prediction program.

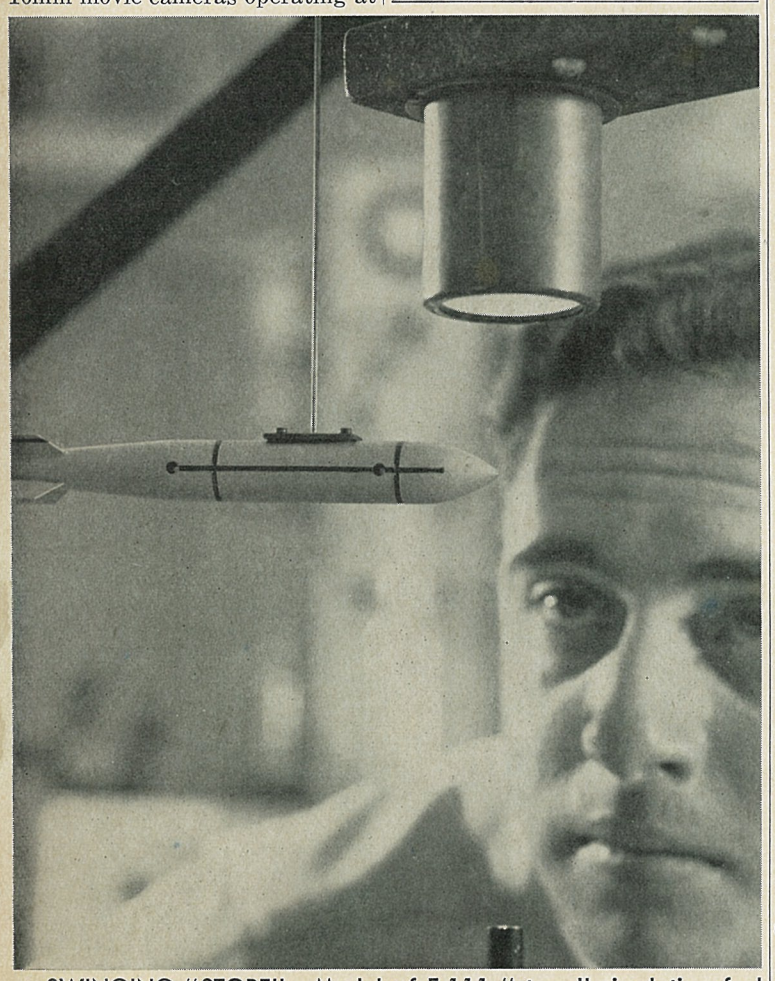
So far, 200 to 300 models of 24 different configurations have been designed by Convair's aerospace lab design group and built in Convair machine shop and Electronics-SD fabrication. Models are designed to the inertial mass properties of full-scale fuel tanks or missiles to provide accurate test data. Ed Collins and John Beard were lead engineers on the design project.

Star II Completes Operations in Gulf

The research submarine Star II, owned and operated by Electric Boat division of General Dynamics, has been assigned to the Company's Marine Technology Center in San Diego where it will be based for several months.

Star II recently completed three months of operation in the Gulf of Mexico where it was used for pipeline, wellhead, and platform inspection by several major oil companies.

Several research projects are scheduled for Star II during its stay in San Diego.



SWINGING "STORE"—Model of F-111 "store," simulating fuel tank or missile, is oscillated on torsion pendulum during calibration by Tito Salzman of Convair aerospace lab design group. Model stores are dropped from scale model F-111 in wind tunnel tests to determine separation path.

Dr. McCann Named To Corp. Position In Health, Safety

John P. McCann, MD, chief of aerospace medicine for Convair division's life sciences Dept. 592-0, is being transferred to New York Headquarters where he will have Corporate responsibilities for health and safety.

Dr. McCann

He assumed his new duties this week.

Dr. McCann, a retired Air Force colonel and former deputy surgeon of the USAF Air Training Command, will spend part of his time in San Diego for the next six months, assisting with a Convair study for the AF Aerospace Medical Division.

New Type Insulation Developed For Space

Superfloc, a new high performance insulation developed by Convair's thermodynamics cryogenic group (Dept. 584-0), has been found in division-conducted tests to have better performance characteristics than any other known insulation for use in long-term storage of cryogenic fuels in space.

The insulation consists of layers of thin sheets of aluminized mylar "radiation shields" flocked with tiny 1/16-inch-diameter tufts of white dacron fibers. The dacron-fiber tufts, arranged in a triangular pattern, are ⅜-inch apart and "stand" about .040-inch above the mylar base.

The tufts have very low heat conductivity and separate adequately the layers of mylar so that helium can be pumped through the insulation, expelling oxygen or other contaminants that could freeze and reduce effectiveness.

By reducing fuel loss, use of the lightweight insulation on nuclear-stage or other large space vehicles could reduce the amount of fuel required and as a result achieve a weight improvement, Karl E. Leonhard, Dept. 584-0 design specialist, indicated.

As much as two million square feet of Superfloc in 200 or more layers could be used for insulating liquid hydrogen or other high-energy cryogenic fuels for future space vehicle flights of several months or years duration.

Production of 5,000 square feet of Superfloc, in 65 20-by-4-foot sheets, was completed by Convair last month under a contract from NASA's Marshall Space Flight Center in Huntsville, Ala.

R. E. Tatro, Convair thermodynamics group engineer, said NASA scientists will compare the Superfloc with NRC-2, SI-62 and other existing types of insulation.

Dept. 491-0 manufacturing development engineers designed the production equipment and produced the Superfloc for NASA testing. They were Henry Kobrich, Gerald Peddie, Marvin Jordan, Frank Bench, James Pardubsky. Charles Ogle of Dept. 572-1 and Frederic Yochim, a Dept. 454-0 plastics mixer, also assisted.

Personnel from Dept. 454-0's wood mock-up area, under the direction of William R. Walker, foreman, and C. Robert Clark, leadman, constructed the vibrator, tables and drying racks for production use.

Dry Immersion Bed Developed At Convair Will Be Marketed

A dry immersion bed developed by Robert C. Armstrong, MD, manager of Convair division's life sciences Dept. 592-0, and used by the division in space medicine research studies is now being manufactured commercially by a Van Nuys, Calif., firm and is expected to have widespread use in hospitals and medical rehabilitation centers.

Patients using the bed lie on a waterproof sheet and remain dry while "floating" in water heated to body temperature. Because the patient is buoyantly supported, there is an infinite number of "pressure points" and minimum pressure on any single part of the body.

The bed will be used for patients in long-term bed confinement cases, such as those resulting from neurological damage, for prevention and treatment of pressure-produced skin ulcers. It also may be used for treatment of massive skin burns.

Neil Martin, Convair patent attorney, said Aqua-Rest of California is exclusive licensee for manufacturing the bed under an agreement in which General Dynamics and the inventor received an initial payment and will receive royalty on net sales. Martin and Stan Kerr, patent engineer, handled patent details.

The prototype bed, built by Convair, at last report had been in continuous use for treatment of patients at the University of Pennsylvania hospital rehabilitation center in Philadelphia since Sept. 17, 1965.

It was requested for use with a patient in critical condition there after a member of the hospital staff saw it demonstrated at an Aerospace Medical Association technical symposium in New York.

The bed is equipped with a heating element and water circulation system and has a motor-driven internal structure that can be raised and lowered to facilitate patient transfer or for tilting.

Convair life sciences personnel built two of the beds for use in research on metabolic rates of "astronauts" under simulated weightless conditions, one of which is still available for use at Kearny Mesa.

The tests were conducted by W. A. Shafer, MD, and John McCann, MD. Ernie Casco assisted with design drawings and Richard Wolf and George Gill with fabrication.

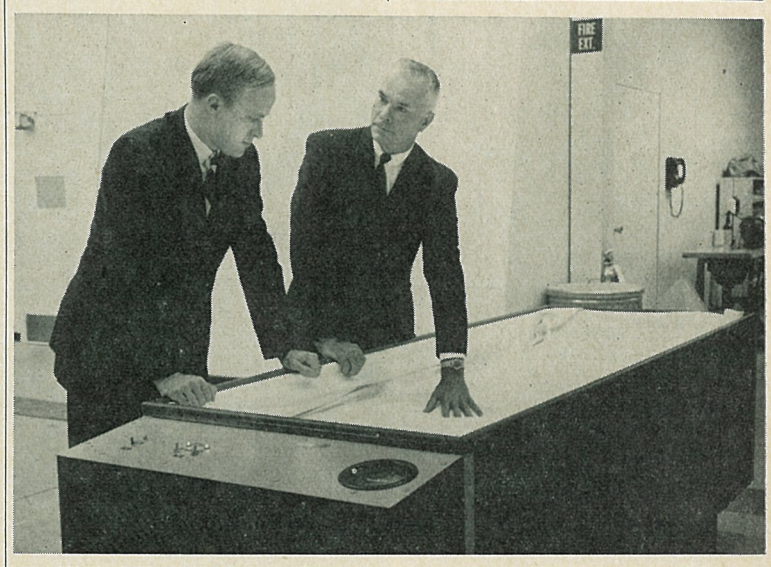
Aqua-Rest of California has constructed three beds of the design it will market — featuring fiberglass rather than wood construction. One is currently being tested by Underwriters Laboratories.

Advanced Degrees Awarded to Four

Four Fort Worth men received advanced degrees from Southern Methodist University recently in the SMUTCU Graduate Engineering program.

G. L. Bowman and G. C. Coffman, Dept. 63-4, received master's degrees in civil engineering.

J. A. Bourgeois, Dept. 62-3 and C. R. Woodbury, 62-6, earned master's degrees in electrical engineering.



NEW BED ROLE—Robert C. Armstrong, MD, right, and Neil Martin, patent attorney, discuss dry immersion bed developed at Convair for use in space medicine studies. It has been licensed for commercial production for use in hospitals and medical rehabilitation centers.

DAMAGE DETERRENT—Cardboard container for use in separating machined parts at Convair is formed by Gilbert Hays of Dept. 733-0, left, while George Landy, assistant foreman, center, and Jack Kline, general foreman-fabrication, show how disposable cartons will protect Atlas lock rings and pressure regulator bodies during movement between factory locations.

Use of Cardboard Containers Cuts Damage to Small Parts

Expendable cardboard cartons of various sizes are being turned out by the dozen at Convair's Kearny Mesa plant for use in handling and storing small machined parts as a means of damage prevention.

"Minor damage to parts was giving us fits," said Jack Kline, general foreman-fabrication, who implemented the new system of using the cardboard handling trays.

"Now each part is handled individually and is separated from others by cardboard dividers as they are moved from one machining operation to another."

The idea for using the quickly-assembled cardboard cartons resulted from the damage prevention program being conducted by plant engineering and educational services.

Slotter and staple machines and hand tools are used in forming the cartons for various size parts. C. W. Maxfield of Dept. 733-0 assisted in developing the process.

Kline said considerable savings are expected to result from use of the cartons by reducing the number of parts rejected due to minor damage.

A total of 414 division employes (357 hourly and 57 supervision) from material handling and production departments attended the division's first series of 20 two-hour damage prevention classes conducted by Will Weidenfeller of educational services.

W. J. Stanley, manager of plant engineering, spoke to each group on the need for meeting division objectives of an improved safety record and reduction of damage incidents.

"By bringing material handling personnel together in this program, a better understanding of the objectives is being reached through better communication," he said. "Measurable performance goals will be established to give clear visibility of accomplishments."

Weidenfeller said employes in the first 20 classes submitted 282 different "preventive action" suggestions for helping to eliminate damage and reduce material accidents and incidents.

H. F. Jennings, plant engineering representative for the program, is "following up" on each of the suggestions and working with supervision in their implementation. Several also are expected to qualify under the Employe Suggestion program, which pays 10 per cent of first-year savings to the suggester.

Ten additional damage prevention classes were held through the middle of this month at Lindbergh Field, bringing total number of attendees to 750.

Stanley said a steel company survey of 90,000 accidents and incidents indicates there are 500 property damage accidents for every 100 minor injury accidents and one disabling injury accident.

"In almost every injury case, there also is property damage," he said. "If we can eliminate property damage at Convair, we should go a long way toward eliminating industrial injuries."

Photographs of material and parts damage at Convair are shown in the classes, disposition of IRs (inspector's report action requests) are discussed in detail and the individual workman's responsibility as the "best inspector" of his own work is stressed.

Emphasis is placed on need for care in storage and handling of material and parts. Stanley said parts are in production only 20 per cent of the time and in some aspect of material handling the remaining 80 per cent.

Time For Briefings At LF Plant Changed

Time of briefings on Convair products at Lindbergh Field has been changed to 3:50 p.m. Thursdays. Presentations at Kearny Mesa continue to be held on Mondays at 4:45 p.m.

Lindbergh Field programs are held in the Bldg. 5 engineering auditorium. Kearny Mesa presentations are in the Bldg. 8 cafeteria.

Tomorrow's (Nov. 16) program at Lindbergh Field plant is on Atlas, Centaur, and Advanced ICBM.

Next scheduled programs are Nov. 27 and 30 — Maneuverable spacecraft, reusable launch vehicles and manned space vehicles.

Keefer Memorial Award Established By Film Producers

A Eugene C. Keefer Memorial Award has been established by the Industrial Film Producers Association, Inc. (IFPA) for award annually to an industrial film producer for "outstanding professionalism."

The award was presented for the first time at the annual IFPA awards banquet Oct. 28 in the Hilton Inn in San Diego. It was presented to Convair division.

Keefer, former chief of motion pictures and television for Convair, died Sept. 1 while returning to San Diego from a documentary film assignment at General Dynamics' Quincy division. He had produced more than 800 films for the Corporation and governmental agencies.

Hal Reavely of the motion pictures and television section accepted for Convair.

Convair division also was awarded the IFPA "Indy" trophy for best film in the technical information field last year. The film, "One-One-Zero-Zero," had been produced by Keefer and the Convair motion pictures and television section for NASA and was on the Surveyor program.

Preview of Mexico Xmas Tour Slated

A preview of the annual Christmas in Mexico tour, sponsored by Convair Management Club for all General Dynamics people, will be held tomorrow evening, Nov. 16, 7 p.m. in the Convair executive dining room at Lindbergh Field plant.

Jim Hardison of Convair, tour conductor, will show scenes of a previous trip to Mexico during the holiday season and explain details of the coming 17-day train trip.

Dates of this year's tour are from Dec. 23 to Jan. 7.

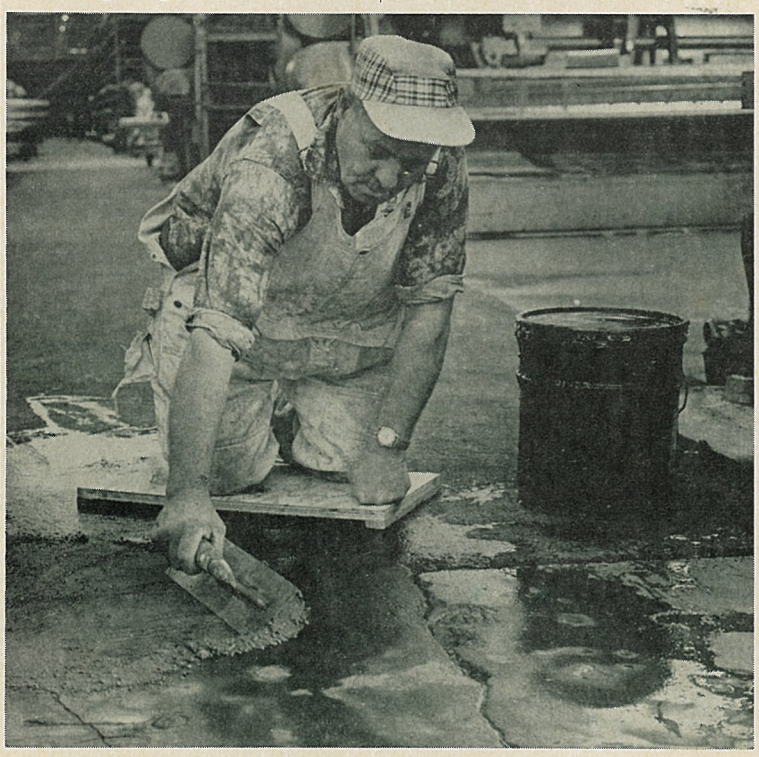
Total price is $405 per person. This covers all train and bus transportation, accommodations at luxury hotels, 10 principal meals, entrance fees.

Hardison may be reached at his home phone 276-5805 for information and reservations.

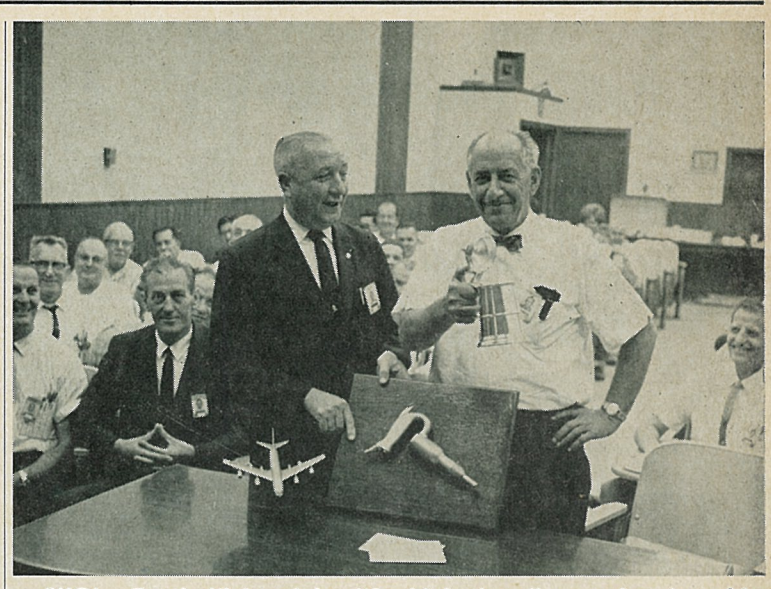
Proposal Writing Booklets Available

A proposal writing aid booklet that fits in a shirt pocket or the palm of the hand was produced recently by Convair's proposal development Dept. 580-2 for students in Management Club-sponsored effective writing courses taught by Emory Thurston at Kearny Mesa and Donn Olsen at Lindbergh Field.

Additional copies are available for personnel concerned with proposal writing. Phone Bill Chana, chief of proposal development, ext. 3166 KM.



FLOOR REPAIR—Harry Means, maintenance carpenter at Convair, patches crack in cement floor in Lindbergh Field building as result of suggestion originating in damage prevention instruction. Project is only one of many implemented to eliminate causes of possible damage to material or injury to personnel.



SKOL—Dutch Klein, right, lifts high the silver stein given him by fellow workers at his retirement from Convair. Scotty Doig holds plaque with "goldplated" rivet gun which, together with Convair 990 model, were given Klein as mementos marking more than 39 years with Company.

Apprentice at 15

Long Convair Career Ends As Dutch Klein Takes Rest

Kurt Klein, better known as "Dutch," ended 39 years and nearly three months of service with Convair the end of October.

Klein, a master machinist, was born in Einod, West Germany, and trained at the Dingler Machine Co. in Zweibrucken. He was 15 years old when he began his four-year apprenticeship as a diesel and steam engine machinist. But he progressed so rapidly that, at 20, he was sent to Haiti in the West Indies to supervise installation of diesel engines for the power plant at Port au Prince. He stayed on to instruct Haitians in operation of the engines and then transferred to U.S. Civil Service for a couple of years to avoid returning to Germany. From 1924-26 he was in charge of construction of bridges, water and radio towers from prefabricated kits shipped from the U.S. Meanwhile he improved his English by trading boxing lessons (his knowledge came out of a book) for language lessons.

There's some question among his co-workers of early days at Consolidated on how much he gained from the lessons!

As a new hire in 1928 at Consolidated, Klein was teamed with John "Scotty" Doig, newly-arrived from Scotland and the only one with a smattering of French who could communicate with Klein.

"We used the inside of the plane's fuselage as our blackboard," laughed Doig as he recounted stories of the old days at Klein's retirement "send-off."

"Dutch wrote a question in French, I told him the English equivalent, and he came back with the translation in German."

In his long years with the Company, Klein worked, for the most part in assembly, on every experimental model of plane produced. He ran the gauntlet from hourly to supervision and back several times as Company fortunes fluctuated.

"I was laid off twice—but never missed a day's work!" he said, explaining that he was called back within minutes one time, and the other, before the next shift.

He was the first to try out automatic riveting equipment and train others in its use in Buffalo and again after the Company moved to San Diego, he conducted in-plant training during the latter part of World War II in riveting, and electrical and hydraulic installations for the B-24. In fact, there are several men still at Convair who remember getting their training under Klein—Sam Galasso and Bill Cushman, to name a couple.

Klein and his wife, Louise, plan to travel in their camper and to take time out to enjoy their grandchildren.

Mgt. Club Reserves 3,000 Seats For Gulls vs. Canucks Game Nov. 25

A block of 3,000 seats to the San Diego Gulls hockey game with the Vancouver Canucks on Nov. 25 has been reserved by the Convair Management Club for "General Dynamics Night.'

All General Dynamics people at San Diego plants may purchase tickets at a dollar off regular prices at employe services outlets. Reserved seats, regularly $2.50 and $3, are reduced to $1.50 and $2 for the holiday family event.

Tickets are already going fast, according to Roy Woodle, chairman of the Management Club's social tours committee, who urges everyone to take advantage of the offer and get tickets before the Nov. 21 deadline.

Tickets are on sale by all Boosters in both Convair plants and at employe services outlets at Convair, Electronics, and Stromberg-Carlson.

Mgt. Club to Hear Crime Discussion

Convair Management Club members, wives, and guests will meet tonight (Nov. 15) at El Cortez Hotel to hear a discussion of crime problems in San Diego.

Main speaker is Lt. William B. Kolender of the City Police Department's public relations office.

Social hour starts at 5:30 p.m. Dinner follows at 6:30 and the program at 7:30.

Contracts department is sponsoring.

Sales Organization Relocated at LF

Sales organization at Convair's Lindbergh Field plant has been relocated into offices along the north executive court of Bldg. 1. Simultaneously, contracts people have been consolidated in the southwest contracts office area of the administration section.

Involved in last week's moves were Phil M. Prophett, director of aircraft sales and service; B. J. Simons, L. J. Bordelon, Gil Clark, Kary Coughlin, R. L. Wintringer, P. S. Bazler Jr., Ken Carline. These men now are in offices on the north side of the patio court.

Contracts men in the new contracts area are S. J. Harris, J. R. Holter, Chet Dutton, J. S. Boaz, G. R. Vetter.

R. R. Hoover of the Convair 600 program office also is relocated within the contracts area.

Most phone extensions remain the same.

Breakfast and Fun Show Slated For Riders Sunday at Rec. Area

A branding iron breakfast and fun show will be held this coming Sunday, Nov. 19, by the CRA Riding Club in the recreation area at Kearny Mesa.

Breakfast will be 50 cents for adult club members, 25 cents for children and 75 cents for guests. Reservations should be made by Nov. 16 with Shirley Berry, chairman, at 277-7191. Breakfast will be served at 7:30 a.m.

The horse show following in the CRA ring will be the last club show this year and the last chance riders will have to get club points.

Over 60 members and guests paraded costumes at the Oct. 28 Halloween party in Missile Park. Judy Watson, Chuck and Scotty Payne fried hamburgers and Floyd Branscom had charge of the chuck wagon. Mrs. Watson was supper chairman.

Games, contests and costume judging took place at the party held in the decorated pavilion under chairmanship of Mickey Underwood.

Mickey Donahoo and her escort, garbed as Tom Sawyer and Becky, won "most original" honors. Terri Branscom, as a flower child, was judged "prettiest." Jane Nash was the "funniest" as a convict. Betty Washburn and Sam Special were judges.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Monday, Nov. 20. Call ext. 1071 LF or 3322 KM.)

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ADVENTURERS — Film showing tonight, Nov. 15, 7:30 p.m., CRA Clubhouse. Thanksgiving trip to Sonora, Mexico, Nov. 23-26. Call Dick Bowen, ext. 3233 KM.

ARCHERY—Shoot Nov. 19. Al Stone, ext. 586 LF.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park. Call Al Van Norman, ext. 1864 KM.

BICYCLE CLUB—50-mile ride to Encinitas Nov. 18. Leave Salk Institute at 7:30 a.m. Short rides each Sunday 2 p.m. from Islandia Hotel, Mission Bay.

BRIDGE — Play every Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

CHORUS—Rehearsals open to GD employes and families each Tuesday, 7:30 p.m., CRA Clubhouse. Call Jim Pate, ext. 3034 KM; Jo Anne Bray, ext. 1091 LF; or Walt Minor, ext. 1111 KM after 4:30 p.m.

COINEERS—Turkey drawing tonight, Nov. 15, 8 p.m., Convair cafeteria LF.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING—Meeting Nov. 21. Potluck 6:30; meeting at 7:30 p.m.

GOLF—Entries for Dec. 2-3 tourney at Chula Vista accepted Nov. 16-27. Call ext. 1111 KM.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Mondays through Fridays; 10 a.m. to 5 p.m. Saturdays. Call ext. 1111 KM.

ICE SKATING — General Dynamics family skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

JUNIOR SCIENCE — Workshop Nov. 17, 7:30 p.m., CRA Clubhouse.

PISTOL CLUB—Shoot Nov. 26, 9:15 a.m., SD Police Pistol Range.

RADIO CLUB—Meeting Nov. 16, 7:30 p.m., CRA Clubhouse.

RIDING CLUB—Breakfast and horse show Nov. 19, 7:30 a.m., CRA Missile Park. Call Shirley Berry, 277-7191, for reservations.

RIFLE CLUB—Juniors shoot, 1 p.m., Nov. 18; Seniors shoot, 7 p.m., Nov. 22, Gillespie Field Range. NRA Registered Winter League in progress. Call Dick Zeich, ext. 640 LF.

SCULPTURE—Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB—Ski fashion show tomorrow, Nov. 16, 7:30 p.m., Catamaran Hotel. Trade night Nov. 29, 7 p.m., CRA Clubhouse. Last dry land ski class Nov. 19, 1 p.m., Balboa Park. Mammoth Mt. trip Dec. 2-3. Call Bill Vogel, trip coordinator, 488-4044.

SPANISH — Briefing on Mexico tour Nov. 16, 7 p.m., Convair executive dining room, LF.

SQUARE DANCING— Dynamic Eights dance every Thursday, 7-10 p.m., CRA Clubhouse.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB — Meeting Tuesday, Nov. 21, 7 a.m., Convair executive dining room, Kearny Mesa.

WIVES — Potluck luncheon Nov. 29, CRA Clubhouse.

Rifle Club Members Compete For Birds

Four turkeys went as prizes to top scorers in Junior and Senior Rifle Club events over the weekend of Nov. 4 and 5.

Jeff Greer and Chris Manion won birds in the juniors' luck shoot on Saturday, Nov. 4, while Kay Deering and Nick Kourbellas took home turkeys for placing first and second in the seniors' combined turkey and semi-annual trophy event.

Coming Rifle Club events will see Christmas turkey shoots. Juniors will compete for turkeys on Dec. 2, while seniors will have their contest Dec. 3.

Golf Tournament Scheduled Dec. 2-3

Starting times for the next CRA golf tournament scheduled Dec. 2-3 at Chula Vista municipal course will be assigned from tomorrow, Nov. 16, through Nov. 27, said CRA Commissioner Ken Wulfemeyer. Call CRA headquarters at ext. 1111, KM.

CRA Ski Club Elects Eastman as President

Harry Eastman heads the CRA Ski Club following Nov. 7 elections at the Catamaran.

Roy Poston was elected vice president for the water ski activity and Robin Bithell, vice president for snow skiing.

Snow skiing secretary is Carol Payne; treasurer, Bernie Anderson. Water skiing secretary-treasurer is Carol Backus.

The club has scheduled the annual ski fashion and equipment show for tomorrow evening, Nov. 16, 7:30 p.m. at the Catamaran.

Trade night is set for Nov. 29 in the CRA Clubhouse. Equipment should be brought to the Clubhouse between 6:30 and 7 p.m.

This Sunday, Nov. 19, is the final dry land ski instruction session in front of the Puppet Theater in Balboa Park. Over 100 have attended the classes.

A snow ski trip to Mammoth Mt. will be the weekend of Dec. 2-3. For information contact Bob Vogel, trip coordinator, 488-4044.

Pine Crest Escapes Fury of Brush Fire

Pine Crest, Convair Recreation Association's mountain resort near Julian, was fortunate to escape damage by brush fires which early this month burned over 10,000 acres in the area.

The fire started just about 2½ miles west of the Convair property but was blown away from Pine Crest by Santa Ana winds. Normal wind direction is from west to east, said J. K. Field, chief of employe services, which would have swept the fire directly toward the wooded recreation area.

Roads to Julian and the nearby CRA resort on Hwy. 79 now are open and conditions back to normal.

Convair Rifle Club To Sponsor League

Convair's Rifle Club is sponsoring an NRA registered winter league for all junior and senior NRA members and affiliated clubs in the San Diego area.

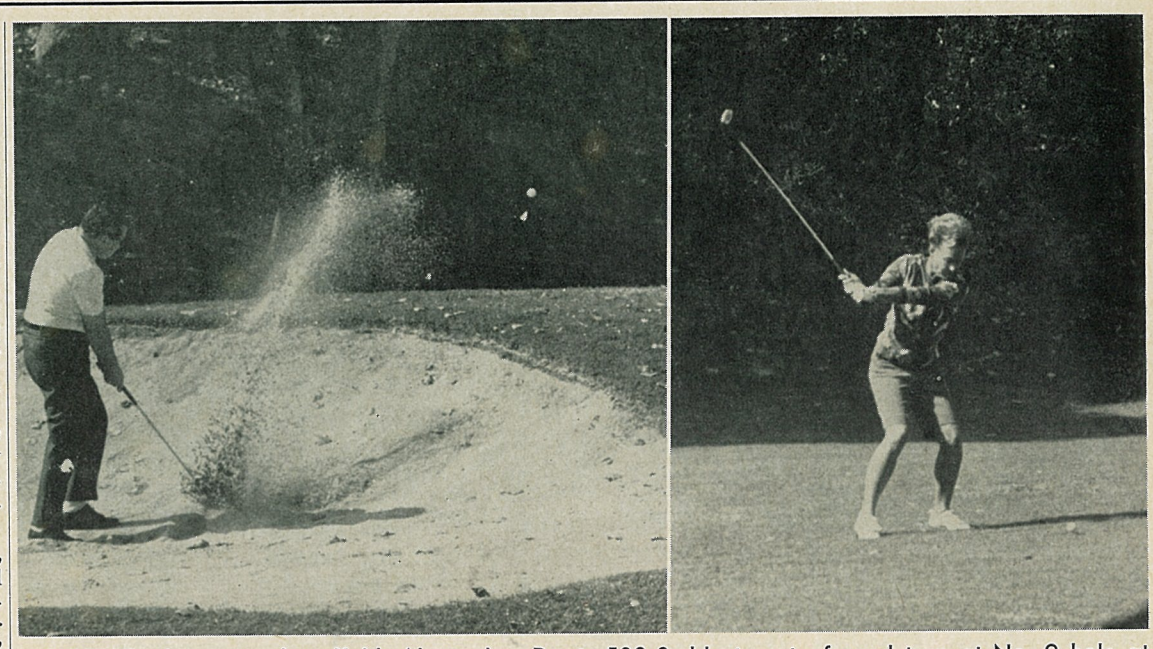
Applications will be accepted through Dec. 10, said CRA Commissioner Dick Zeich who may be reached at ext. 640 LF or 276-0551 evenings.

Fees are $1 per individual, 35 cents for league brassard, and 40 cents for targets.

Bridge Tourney Now in Progress

CRA Bridge Club members are playing different partners at 7:30 p.m. Fridays in the CRA Clubhouse in the winter tournament running through Dec. 29. The tournament winner will receive a trophy. New players are invited.

First place winners in Oct. 27 play were J. F. Jaminet and Mrs. S. R. Ishihara. Commissioner and Mrs. Bob Rustad won the monthly Master's Point tournament Nov. 3.



WHEW!—In upper shot, Keith Alexander, Dept. 508-0, blasts out of sand trap at No. 9 hole at Singing Hills during Oct. 28 Convair Management Club golf tourney. At right, Arlene Talmadge, Dept. 193-1, only woman to participate, takes aim at tee shot.

55 Compete in CRA-Mgmt. Club Net Tourney

Results of finals of the fall tennis tournament sponsored by CRA Tennis Club and Convair Management Club are:

Novice women's singles—Loretta Blevins defeated June Casey, 6-2, 6-2.

Novice men's singles — Vince Marikle edged Bob Hintz, 6-2, 7-5.

Intermediate men's singles — Rick Norwood outpointed Ed Pawka, 5-7, 6-1, 6-2.

Intermediate women's singles—Vicki Jensen edged Ruth Bennett in round robin.

Advanced men's singles—John Cannau was winner over Dennis Sealey, 6-2, 6-2.

Novice men's doubles — Scott Gorham and Milt Kreml defeated Ed Zivolich and Peter Proskauer in round robin.

Intermediate men's doubles — Rick Norwood and Ed Pawka edged Dick Mostowy and Dave Gorham in round robin.

Advanced men's doubles—Dave and John Bennett defeated Erhard Rothe and Dennis Sealey in round robin.

Mixed doubles—Dave and Ruth Bennett outpointed Bill Connor and Vickie Jensen, 7-5, 6-2. Sam and Aline Kaye were consolation division winners.

Fifty-five players competed in the tournament which began Oct. 7.

In another recent tournament for members of the fall beginners tennis class, Dick Nelson edged Jim Staley in a round robin for the men's singles title and Rosemary Comito defeated Dori Benson for the women's singles title.

Bargain Tickets

(Following are bargain-rate tickets currently available to employes. Unless otherwise stated, they are offered at employe services offices of Convair, Stromberg-Carlson, Electronics-SD, H. C. Medearis' office at AF Plant 19, and CRA Clubhouse.)

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Tickets to "Gone With the Winds," Dec. 7 showing, 8 p.m., Circle Theatre, Mission Valley. $2.50 seats for $2. Deadline Dec. 4.

Gulls vs. Vancouver Canucks ice hockey game Nov. 25, Sports Arena. $1 discount on regular $3 and $2.50 reserved seats.

San Diego State Aztecs vs. Montana State football game Nov. 18. $3 seats for $2.50.

Chargers vs. Denver Broncos, 1:30 p.m., Nov. 23 (Thanksgiving Day). Reserved seats, $6 and $4.50. Limited supply.

Rockets vs. San Francisco pro basketball game Dec. 2, Sports Arena. $3 seats for $2.50.

Annual Mickey Mouse Tourney Draws Stellar Field of 150

Over 150 members and guests teed off Oct. 28 in the Convair Management Club's annual Mickey Mouse golf tournament, one of the best attended links matches ever staged by the club.

Thirty-eight members of the Lockheed Management Club came from Burbank and Vandenberg AFB to take part in the blind bogey event, and one woman member of the Convair group, Arlene Talmadge, Dept. 193-1, participated. The all-day tourney was played over the east course at Singing Hills.

Top winner in the first flight were: Ray Demitrowicz, Dept. 420-4; Art Braidic, Dept. 835-0; and Dick Tobias, Dept. 961-2. Second flight winners were Bob Lutz, Dept. 102-0; Paul Morton, Dept. 954-2; and Don Walin, Dept. 584-0. First three places in the guest flight went to Tom Bisping, Tom Gardner, and Dan Hooker, all of Lockheed. Gift certificates in the amounts of $14 to $5 were given through seventh place in each flight.

Gordon Woods (964-2), Forest Erwin (403-3) and Dan Hooker of Lockheed won special prizes for placing their tee-shots closest to the pin on Nos. 7, 11, and 14 holes. George Putness of Dept. 102-0 shot a 270-yd. drive on the first hole to win a golf bag.

Terry Kell, club golf chairman, expressed appreciation to members of the GD Women's Golf Club who kept score on the three-par holes. Assisting were Edie Mellett, Dorothy Johnston, and Helen Stevens.

Adventurers Plan Trip to Kino Bay

CRA Adventurers are taking reservations for their four-day Thanksgiving trip to Kino Bay along the Gulf of California coast in Sonora, Mexico.

Driving distance from San Diego is 625 miles via Mexicali, Sonoita, Hermosillo.

Rendezvous will be Thanksgiving Day at 3:30 p.m., Mountain Standard Time, at Kino Bay. The group will caravan the 18 miles to the campsite at Punta Narraganse Santa Rose.

Full information can be received from trip coordinators: Ray Madden, 284-8252; Joe Quijada, 284-0883; or John Smalding, 279-2798.

Color Travelogues Scheduled Tonight

Two color travelogue films, one shot in Guatemala and the other in Peru, will be shown tonight, Nov. 15, 7:30 p.m., CRA Clubhouse, under auspices of CRA Adventurers.

The films, 30 minutes each in length, entitled "Jungle Land" and "Inca Land," focus on scenery, interesting people and places.

The program is open to the public without charge.

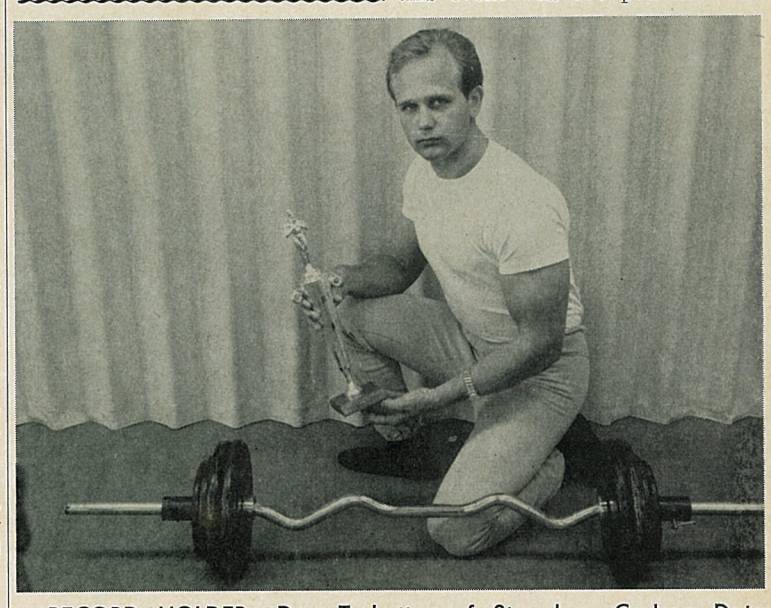
S-C Athlete Sets Record

Don Tschetter, an engineering expediter in Stromberg-Carlson Data Products and an avid weight lifter, established a new state record by curling 155 lbs. in a city championship meet Oct. 28 in Balboa Park.

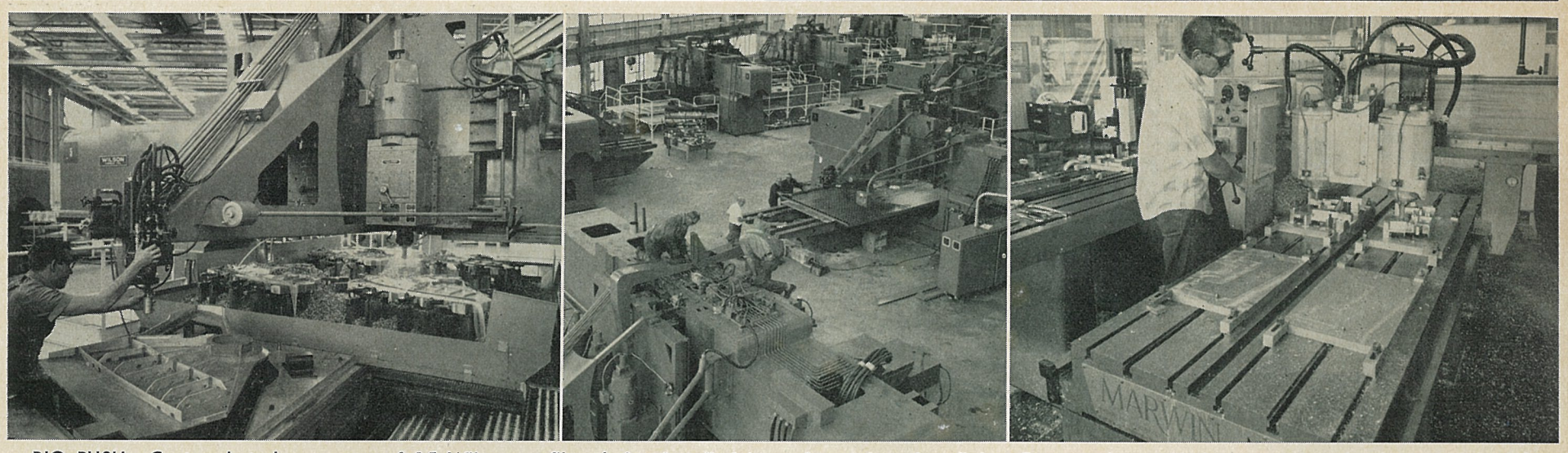
The curl is accomplished by bringing the weights in an arc to the chest while in standing position. The old state record of 148 lbs. was held by Larry Kelly of San Diego.

Tschetter, who has worked out with weights three or four times a week for the past nine months in the CRA Health Club, also took first place in the bench press with 280 lbs.

In this event, the contestant lies on his back, takes the weights at arm's length, lowers them to his chest and pushes them back to arms length. Tschetter's previous record for this event was 300 pounds.



RECORD HOLDER—Don Tschetter of Stromberg-Carlson Data Products shows trophy won in recent weight-lifting meet in which he established new state record with 155-lb. curl.



BIG PUSH—Center shot shows some of 15 Wilson profilers being installed in Bldg. 1 at AF Plant 19 for profiling of F-111 parts. At left, J. R. Price sets machine for cutting pivot fitting. Four can be profiled at same time. In photo at right, W. A. Bowell operates one of new routers going into Bldg. 1 for work on F-111 parts.

Protective Cover Design Wins National Exposition Honors

Protective covers designed by Convair division for in-plant protection of thin-wall stainless steel expansion bellows on Atlas launch vehicles won the honorable mention (fourth place) material handling award at the 19th annual Society of Packaging and Handling Engineers (SPHE) conference and exposition Oct. 17-19 in Dayton, Ohio.

Each of the versatile covers consists of a formed, hard, two-piece plastic shell and an inflatable plastic bladder lined with polyurethane foam. The device is held in position by two straps of nylon tape.

The covers adjust to fit various sizes of bellows and have a unique ability to conform to irregular surface configurations when inflated.

Robert J. Vogler Jr. and Donald E. McMurtrey, Dept. 493-0 materials handling and packaging engineers, said use of the new protective covers in three different sizes will save Convair an estimated $38,821 a year—largely through elimination of damage rework and scrappage.

McMurtrey said the new covers have proved extremely effective in eliminating damage during Atlas vehicle fabrication and modification.

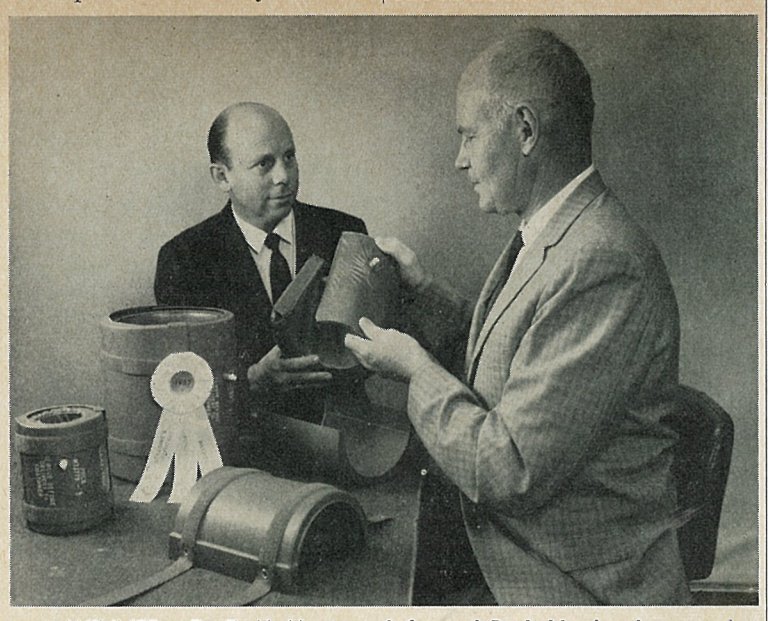
Protection is needed for 10 to 15 bellows of various sizes and shapes on each launch vehicle, depending upon vehicle configuration. The bellows carry liquid propellants during flight.

"Use of the air-filled cover provides enough protection that a worker can stand on it without damage to the bellows," Vogler said. "If an accidental puncture permits the internal air to escape, the polyurethane foam still provides needed protection."

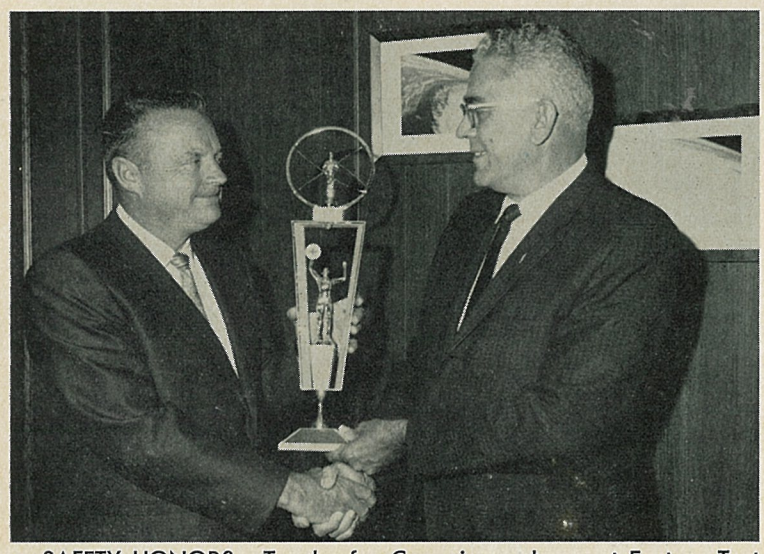
Entries in the national contest were judged on ingenuity, production cost reduction, safety and methods.

"Winning was quite an honor," Vogler said, "as we were competing against new material handling developments from many different industries."

Is it news? Pick up a phone and call GD/NEWS



A WINNER—D. E. McMurtrey, left, and R. J. Vogler Jr. examine versatile Atlas launch vehicle bellows covers that won award for Convair division at National Society of Packaging and Handling Engineers exposition.



SAFETY HONORS—Trophy for Convair employes at Eastern Test Range for full year without lost-time accident is presented to K. E. Newton, right, ETR operations manager, by M. V. Wisdom, director of industrial relations. ETR missed earning trophy a year earlier when accident occurred on 364th day.

Full-Day Schedule Set For Tool Stores

Employe tool stores operated within Convair plants by the Western Metal Supply Co. are both on a full-day schedule, according to Bert Sutton, manager.

Hours for the tool store at Lindbergh Field plant are 8:30 to 11:45 a.m. and 12:30 to 4:30 p.m., Mondays through Fridays. It is located at the north end of Bldg. 32, ext. 520 LF.

The tool store at Kearny Mesa plant is open 9 to 11:45 a.m. and 12:30 to 5 p.m., weekdays. The KM tool store is in Bldg. 5 at Col. H-1, ext. 2358 KM.

Besides being able to purchase small tools and other items at discount prices, Convair employes also may put in special orders for articles listed in the company's catalogue. These include small appliances, tools, kitchenware, and watches. Items are sold at wholesale price on a cash basis.

Thousand View Garden Club Show

Over 1,000 people viewed Garden Club displays at the Oct. 29 annual fall flower show in Balboa Park, one of the best and largest ever staged by the Convair group.

Co-commissioners Everett Henderson and Gene Zimmerman said all flowers were of superb quality.

Best of show honors in various divisions went to Mr. and Mrs. Henry Boyd, Evelyn Glasser, Bill Spann, club president, Mr. and Mrs. Jim Buman, Marge Hornby and LaVonne Splinter. Lisa Sinnott won in the children's division.

Second Empennage Goes to Lockheed

(Continued from Page 1)

lifting all types of combat and support forces—complete with tanks, equipment, and supplies—anywhere in the world within 24 hours. Its total length will be 246 feet with a wing span of 223 feet and a tail which is more than 65 feet off the ground.

With engines and operating equipment installed, but minus fuel and payload, the C-5A will weigh 323,900 pounds. It will be powered by four General Electric TF-39 turbofan engines.

Coineers to Draw For Birds Tonight

Convair Coineers will draw for turkeys at tonight's (Nov. 15) meeting at 8 p.m. in Convair cafeteria, Lindbergh Field.

The turkey drawing will be for members only. However, drawings for proof sets, silver dollars, and pesos will be open to all. Door prizes will be six 1955S BU one-cent pieces.

GD/NEWS DEADLINE SET UP NEXT ISSUE

Deadline for news for the Nov. 29 issue of the General Dynamics NEWS will be set up a day because of the two-day holiday over Thanksgiving. Last day to submit news for that issue will be next Tuesday, Nov. 21. All photos must be in by Friday of this week.

New F-111 Machinery Installed at Pl. 19

Production area in Air Force Plant 19 at Convair is fast filling with profilers and routers for assist work on F-111 components.

Fifteen large Wilson profiling machines will occupy the northeast side of Bldg. 1 when installation is completed next spring. There are at present five profilers in operation. One other is being tooled and four more are being set up.

Seventeen English-made routers already have been installed and are in operation in the center of the building, in the area adjacent to the profiling section. Three others are presently being installed, five more are on order from England and are expected in plant shortly after the first of the year.

Both the profiling and routing operations at Plant 19 are part of the Lindbergh Field plant machine shop under the direction of O. C. Banke, general foreman.

Twelve of the large Wilson profiling machines will be profiling the huge wing pivot fittings for the F-111, two will be put to profiling longerons; and one to profiling pivot and fixed pylon details.

Patterns are traced with hydraulically-controlled 3D tracers. Although each of the machines is equipped with six spindles, only four can be used at one time during pivot fitting profiling because of the size of the parts. Bed of the machines is 10x18 feet.

Key operators, V. D. Bailiff and Leon Stallings, together with R. L. Williams, assistant foreman, were sent to Canadair Limited for training on the machines. Canadair is using Wilson profilers, also on F-111 parts. These operators, in turn, are training other operators as the equipment goes into use at Convair.

When all of the machines are installed there will be 90 men assigned to the profiling and related operations on three shifts.

Williams is first-shift assistant foreman; E. H. Wallrabenstein, second shift; and Alvin Becker, third shift.

Routers have been in work on F-111 parts—bulkheads, beams, and ribs—since this spring. There now are 97 working three shifts with employment expected to reach at least 120 when the entire 25 machines are installed.

Assistant foremen in charge of routing are Vern Logan, Stan Penziul, and D. J. Galloway on first shift, and D. J. Haldaman and W. D. Valentine on second; and R. E. Brown on third shift.

IDEA REWARD—H. G. Brittain, left, Dept. 578-1 senior test lab engineer, receives Employe Suggestion award check for more than $1,000 from Paul Ferrara, director of engineering administration and services.

Sr. Test Lab Engineer Earns $1,187 With 'Valve Shop' Idea

Harold G. Brittain, a Dept. 578-1 senior test lab engineer at Convair's liquid hydrogen test Site B at Sycamore Canyon, has been awarded a $1,187.10 Employe Suggestion award check for an idea that will save the division 10 times that amount during the next year.

Brittain's suggestion resulted in a centrally located "shop" being established for repair and replacement of valves used in each of the division's engineering test laboratories.

Robert Tuttobene, test lab group engineer, said each lab previously had its own supply of valve parts but no "expert" to handle repairs and coordinate parts available for valves being used.

The new valve "shop" has been established in the gas flow lab in Bldg. 14 at Kearny Mesa and is operated by Lester B. Turner, a lab test mechanic.

Tuttobene said a standard list of valves and parts also is being prepared to cut down the number of parts being stocked and ordered.

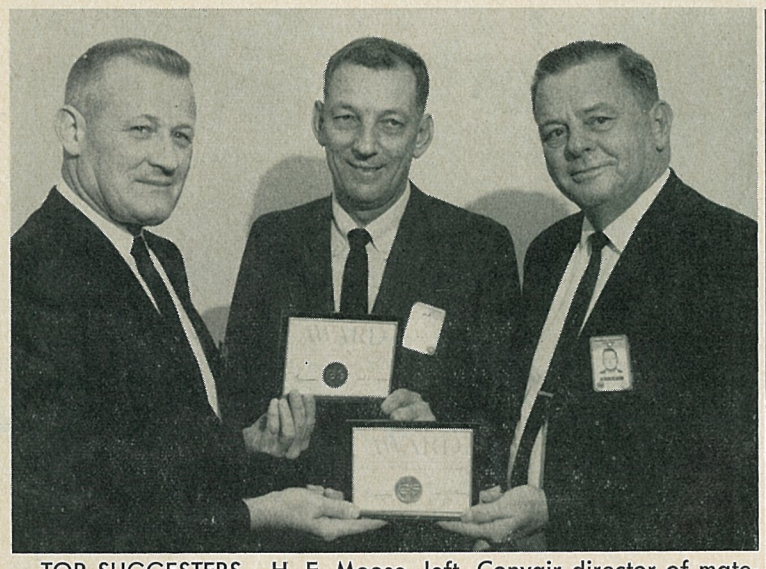
Salvage Schedule

Next employes sales day at Convair salvage yard at the Lindbergh Field plant, adjacent to Gate 5, will be Saturday, Dec. 9. Hours are from 8 a.m. until noon. Admittance is by ID card.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 24 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, November 29, 1967



TOP SUGGESTERS—H. E. Moose, left, Convair director of material, presents Employe Suggestion Award certificates to L. G. Johnston of Dept. 810-0, center, and J. F. Meeker Jr., of Dept. 842-0. Johnston received $2,048.90 and Meeker $4,452.30.

Big Suggestion Award Checks Earned by Five

Five Convair employes have received award checks totaling more than $9,500 for Employe Suggestions that will save the division 10 times that amount during the next 12 months.

Jack F. Meeker Jr., a federal item identification analyst in Dept. 842-0, was awarded $4,452.30 for a suggestion that consolidates various data processing reports and merges federal and material data on computer tape.

Several data processing reports and unnecessary duplication of data was eliminated through the proposal.

L. G. Johnston, a technical buyer in Dept. 810-0, received $2,048.90 for suggesting procedural and specification changes for timely replacement of Centaur vent valve bellows during valve modification for an estimated cost saving of $20,489.

J. F. Strazz, a senior buyer in Dept. 985-3 at Vandenberg AFB, earned a $1,092 award for suggesting changes in procurement authorization procedures at offsite bases.

Under his proposal, material procurements not exceeding $500 and for which certification is not required may be ordered by phone where payment is being made from petty cash funds.

Typing and mailing of procurement authorization forms to vendors are eliminated except when requested. The suggestion has been implemented both at Vandenberg AFB and the Eastern Test Range (ETR).

J. A. Matthews and R. W. Suess, senior launch services technicians in Dept. 979-1 at ETR, each received $1,000 for suggesting refurbishment and reuse of Centaur umbilical adapters after each launch. The adapters previously had been discarded after first use.

NASA officials approved an engineering change proposal for implementation of the suggestion, which will save an estimated $20,000.

Club Scholar Panel Named

Groundwork is being laid for the Convair Management Club's annual scholarships for the year of 1968 for top-standing Convair sons and daughters.

Mark Saunders Jr., club scholarship manager, has appointed the following to the committee which will select scholarship winners: Joe Bowers, Dept. 140-1; Gene Hartzler, Dept. 195-0; Dick McGuire, Dept. 964-0; Helen Pemberton of **GD/NEWS**; and Wayne Turner, Dept. 131-4.

Applications will be available at San Diego area high schools and in-plant after the first of the year. All forms must be submitted by the end of next March. Winners are selected by the end of May and usually announced in June.

Some 90 applications were received for 1967 scholarships which were won by Convair sons and daughters Ruth Anne Gjerset, Nikki Joyce Perkovich, Robert George Spitzer and Michael Alan Van Horne. The four scholarships were $500 each.

Convair Men Hold Top Scouting Posts

Two Convair employes were installed as top administrative officers for the Balboa district, Boy Scouts of America, at an annual dinner meeting attended by 500 persons Nov. 11 in the Kearny Mesa plant cafeteria.

William M. Alexander, Dept. 957-2, is chairman for the district, which has 5,400 scouts in 125 Cub Scout packs, Boy Scout troops and Explorer Scout posts.

J. M. Ibarra, Dept. 193-3, is district commissioner.

H. O. Story, Dept. 142-0, was dinner chairman and was assisted by J. D. Greenwald, Dept. 191-0; R. T. Rowe, Dept 420-4; F. K. Tercey, Dept. 519-0, and A. R. Pond, DCASPRO.

'Secret,' 'Confid.' Papers Purged

Purging of all non-essential classified documents from Convair division departmental files is scheduled for completion Friday (Dec. 1) in the first phase of a two-phase division program to be completed before new Department of Defense security regulations become effective.

In phase 2, which begins Monday and will be completed by Jan. 12, each employe must inventory and obtain authorization for all classified documents being retained.

All cabinets containing "confidential" and "secret" material must be secured by Sargent-Greenleaf changeable-combination locks. Cabinets containing "secret" material must be patrolled every four hours during non-working hours beginning March 1.

S. R. Sharp, manager of industrial security, said considerable cost avoidance will be achieved and patrol requirements simplified by reducing both the amount of classified information being retained and the number and locations of file cabinets in which it is stored.

"Additional savings will be realized since it costs an estimated $7 per year for handling and storage of each 'secret' and $2 for each 'confidential' document," he said.

Convair's 68 departmental security representatives and 57 control station custodians were briefed on procedures and the new DOD regulations in meetings Nov. 13 at Kearny Mesa and Lindbergh Field.

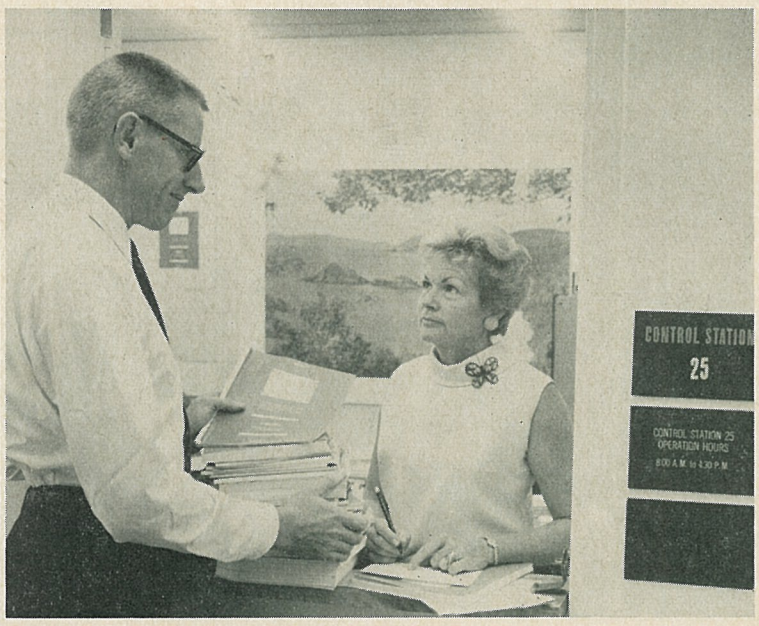
Employes are to report on Form 5792-2 number of "confidential" documents being destroyed and identification and number of those being retained.

Approval for retention of each "confidential" document and

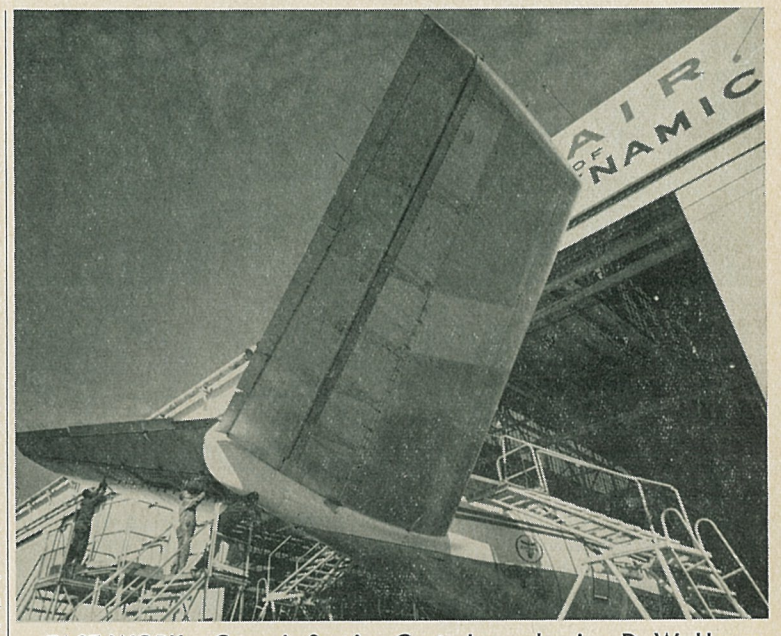
(Continued on Page 2)

Persons who come across data on any Convair plane while clearing out files are asked to contact J. B. Harter at ext. 1570 or 516 at Lindbergh Field plant.

Harter says that many reports and studies on Convair military and commercial aircraft during development and production are still valuable and in demand. This data can be filed at the Lindbergh Field plant depository for future use.



DOCUMENT DELIVERY—Robert E. Bradley, a Convair Dept. 589-2 design specialist, delivers "secret" documents to Betty Gray, control station 25 custodian at Kearny Mesa. All unessential classified documents are being purged from files and those approved for retention inventoried in two-phase, division-wide security program.



FAST WORK—Convair Service Center's mechanics, D. W. Hayes, J. E. Sterling, J. R. Heriot, work on Continental Air Lines 707 during rush modification task. Center is on two shifts to complete task by next week.

Service Center Working On Boeing 707 Mod Job

Convair Service Center at San Diego is midway in a modification program for Continental Air Lines Inc. of Los Angeles involving updating one of the line's Boeing 707s.

Most of the plane's systems are involved. The modification incorporates 14 Boeing-designed changes. Added maintenance tasks, which may include painting if the tight schedule permits, may be done by the Center.

The Service Center also will be responsible for inspection of all systems affected by the changes before delivery to a Continental crew noon of next Thursday, Dec. 7. The airline will flight test the plane after pick-up.

The plane arrived at the Service Center the evening of Nov. 11. Over 50 operations people have been working two shifts throughout the stepped-up program to complete the work in 17 manufacturing days. All tasks have been performed in Bldg. 3 at the Center's Lindbergh Field site.

James McCrae, CAL resident representative, is monitoring the work for the airline.

Continental Air Lines is a commercial and charter line, flying regularly-scheduled passenger routes within the United States, including Hawaii, and chartered flights for MATS to the Far East.

The aircraft undergoing modification has experienced approximately 7,500 flight hours prior to the overhaul inspection. All areas inspected have been found to be exceptionally clean, which is indicative of the exceptional maintenance program conducted by CAL, E. J. Huntsman, manager of the Service Center, pointed out.

Huntsman continued, "This is an extremely important program to the Serivce Center and our objective is to give the customer a completely satisfactory modified product for the least cost and within his time span in order for us to negotiate a follow-on contract with CAL, as well as approach other airlines such as TWA for similar type work. The progress to date has been most gratifying and we are looking forward to other business opportunities of this nature."

Mgt. Club to View Marines' Pageant

Marine Corps Recruit Depot will present the program at Convair Management Club's meeting Dec. 14 in the International Room of El Cortez Hotel.

Maj. Gen. Lowell E. English, MCRD commander, will speak and 19 Marines will perform in the colorful Pageant of the Flags to the accompaniment of the MCRD band.

Wives and guests are invited. Space programs is sponsoring department.

Tickets at $3.25 each are on sale by Boosters at all locations.

SAWE to Hold Xmas Party at Stardust

A Society of Aeronautical Weight Engineers Christmas party will be held Dec. 7 in the Stardust Hotel with social hour at 6 p.m. and dinner at 7.

A special entertainment program, speaker and gift exchange with Santa Claus is planned. For reservations, phone Julie Richardson, ext. 2296 KM by Dec. 5.

Dollar Discounts Offered by Club On Tickets to Moscow Circus

Reserved seats to the Moscow Circus performance on New Year's Day now are on sale to all General Dynamics people at $1 discount, through arrangements by the Convair Management Club.

The club obtained 5,000 seats, half of the available seating at the Sports Arena, for the holiday event, Jan. 1, at 6 p.m.

The $1 discount applies on seats in the regular $3, $4, and $5 sections. No discount is offered on $2 seats.

Tickets may be purchased at employe services outlets at Convair, Stromberg-Carlson, and Electronics-SD facilities. They also are available throughout Convair from Club Boosters, according to Roy Woodle, club chairman for social tours.

The Moscow Circus, called the "world's most exciting spectacle," has only appeared one other time in this country, four years ago. It just closed a successful run at Madison Square Garden in New York City and will be shown at only six cities during its present tour. It is presented in the United States under the USSR-USA Cultural Exchange Program.

LONG SERVICE—W. P. Moore, Dept. 019, right, receives 35-year service pin from Convair Division Manager Jack L. Bowers. Moore marked anniversary on Oct. 13.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due between Nov. 15 and Nov. 30.

Thirty-year: Dept. 733, W. M. Holland.

Twenty-five-year: Dept. 024, M. J. Estes Jr.; 031, F. S. Bender; 143, J. H. Hubbard; 149, B. Hahn; 191, J. W. Hoover; 401, C. H. Jones; 405, E. H. Sting; 565, G. R. McElroy; 566, W. H. Ebright; 572, L. R. Warren; 761, L. Ely; 780, F. B. Franklin; 836, P. E. Franks; 964, J. L. Dunn.

Twenty-year: Dept. 015, H. A. Crane, H. E. Rogers; 149, H. T. Christopherson; 250, F. L. Patterson; 400, W. D. Morrison; 831, W. J. Crover; 832, Doris L. Gustafson; 835, S. L. Shipstead.

Fifteen-year: Dept. 045, S. C. Brogan; 052, Beverly W. Larson; 250, J. E. Epler, R. G. McCusker, W. H. Skoglund, P. Stoops; 401, L. A. Morin; 423, Mary C. Caetano; 460, R. H. Bowersox; 508, N. A. Cross; 518, Minnie S. Kilmer; 519, Sara I. Whisler; 587, J. R. Stitt; 731, R. G. Harter; 732, E. W. King; 780, E. C. Edwards; 820, B. M. Hall Jr.; 831, J. G. Waddell; 843, L. Ferreira; 957, G. Rubalcava; 961, C. L. Greenman; 964, E. V. Ewin; 979, K. E. Newton.

Ten-year: Dept. 027, G. Leith; 031, R. E. Peterie; 059, Ruth S. Adams, L. W. Bishop, W. L. Chartier; 113, Ethel R. Sentie; 149, M. H. Koppel; 196, J. C. Reed; 420, M. E. Sisley; 454, T. P. Hard; 460, C. M. Jackson; 524, Sarah E. Hasha; 526, Florence R. Thomas; 732, L. O. Sachrison; 780, T. W. Wallace Jr.; 979, L. R. Maney.

ELECTRONICS

Fifteen-year: Dept. 391, D. R. Alden.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Nov. 10.

Dept. 005-0, M. W. Packard, S. M. Sharp; 015-0, R. Danner Jr., F. J. Steglic, D. L. Weelborg; 045-0, J. T. Kucala (three awards); 130-8, B. J. Jones; 143-1, K. L. Cocita, M. M. Henry, J. W. Pullis; 149-2, D. T. Espinosa; 194-0, M. A. Silva; 250-4, G. J. Kleber Jr.; 452-0, R. A. Goerres; 519-0, M. S. McGee; 731-0, W. C. Strassburger (two awards); 759-0, P. R. Adams; 761-0, M. L. Breckenridge, D. A. Hottell; 810-0, L. G. Johnston; 831-0, O. G. Lewis; 833-2, J. Giamanco; 834-1, A. O. Rodgers; 834-2, D. C. Basore; 842-0, J. F. Meeker Jr.; D. L. Asakawa; 957-2, W. M. Alexander, G. M. Eckenboy; 979-1, J. A. Matthews, R. Suess; 979-4, J. E. Garrett.

Employe Suggestion awards approved for the week ending Nov. 17.

Dept. 001-0, W. K. Richeson; 015-0, S. Brown (two awards), W. R. Coyle; 019-0, P. A. Piraino; 020-0, R. C. Beezley, J. O. Sandage; 027-0, M. R. Brown, C. L. McNeal; 049-0, D. P. Weaver; 059-1, D. G. Carlson, W. B. Swindall; 131-4, Lois W. Tenwolde; 141-2, R. E. Dubel; 149-0, V. J. Samuelson; 149-8, M. D. Schell; 193-1, O. J. Ohlsson; 250-2, J. J. Nipper; 401-6, J. F. McConnell; 515-0, S. Lipsett; 533-2, G. M. Jackson Jr.; 761-0, C. W. Neal (two awards); 780-2, H. B. Smith; 820-0, R. W. Hardy; 964-2, C. L. Smith.

Deaths

CONVAIR

FRANKLIN—L. S., Dept. 141-0. Died Nov. 15. Survived by his wife, Elizabeth; three sons, Thomas, Michael and Edward; four daughters, Marybeth, Kathleen, Barbara and Patricia; two sisters; and a grandson.

MYERS—Vennie M., Dept. 780-3. Died Nov. 11. Survived by daughters, Mrs. Evia Lavene Powell and Mrs. Betty Jean Axtens.

O'NEAL—J. H., Dept. 045-0. Died Nov. 7. Survivors include his wife, Thelma L.

PHELPS—L. A., Dept. 732-0. Killed in automobile accident Nov. 5. Survivors include daughter, Debra; two son, Gary and Ronald.

Invention Disclosures

CONVAIR

CROSS—N. A., Dept. 508-0. Variable Displacement Submersible.

LOGUE—S. H., Dept. 596-0. Phase Meter For Light.

LOVELL—R. B. and R. A. CLOSE, Dept. 512-2. Rotary Docking Hatch and Mating Spacecraft Nose Cone.

RODEN—W. A., Dept. 491-0. Electron Beam Curve Tracking (High-Speed Analog Programming Method).

WEISINGER—M. D., Dept. 572-2. High Pressure Autoclave Bonding of Fiber Reinforced Metal Matrix Structure.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff, Kearny Mesa, ext. 1931, Bldg. 17, Room 7, 8 a.m., Monday, Dec. 11. Lindbergh Field, ext. 491, Bldg. 14 auditorium, first shift, 8 a.m., Tuesday, Dec. 12; second shift, 4:30 p.m., Tuesday, Dec. 5. AF Plant 19, ext. 491 LF, Bldg. 3, 1st mezz., Col. B-14 conference room, 8 a.m., Thursday, Dec. 14.

CITY COLLEGE COURSES

Registration for four spring semester supervision courses begins Jan. 2 "Human Relations A" will be given at Lindbergh Field, Bldg. 14, Mondays, 4-7:30 p.m. Courses at Kearny Mesa Bldg. 17 will be "Advanced Industrial Economics," Mondays, 4:30-7:30 p.m.; "Human Relations B," Wednesdays, 4:30-7:30 p.m.; "An Introduction to Supervision," Wednesdays, 4:30-7:30 p.m. For information call David Chigos or Hal Rubin, ext. 1931 KM.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY — A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Educational services office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Rider-Driver

CONVAIR

RIDE WANTED—Point Loma to Kearny Mesa, 7 a.m. to 3:45 p.m. shift. Phone Lois Burnett, (home) 223-0438.

RIDE WANTED—From Jackson Drive near Lake Murray to Kearny Mesa. 7:30 to 4:15 shift. Call C. H. Fitch, ext. 1847 KM or home 466-5955.

RIDE WANTED—Lemon Grove to Kearny Mesa. 8-4:45 shift. Phone A. C. Durson, ext. 2270 KM or home 465-1577.

SHARE RIDE—Escondido to Kearny Mesa plant, 8 a.m. to 4:45 p.m. shift. Phone Glenn Jones, ext. 1976 KM or (home) 744-1429.

Personals

CONVAIR

Your kind expressions of sympathy following the death of our son and brother, Archie A. Farmer Jr., is gratefully acknowledged and deeply appreciated.

Mrs. Archie Farmer Sr.
and Robert Farmer

* * *

The family of John R. Pierce wishes acknowledges your kind expressions of sympathy at his death.

* * *

Your kind expressions of sympathy following the death of Wade H. Mathews (retired 1961) are deeply appreciated and gratefully acknowledged.

Aimee Mathews and Molly Hall

* * *

The family of John R. Pierce wishes to express its appreciation for your kindness at the time of his death.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

'Secret,' 'Confid.' Papers Purged

(Continued from Page 1)

"need to know" must be authorized by immediate supervisors.

The approved Form 5792-1 will be submitted to industrial security through the departmental security representative.

Unessential "secret" documents must be returned to the appropriate control station custodian for destruction to insure keeping of proper accountability records.

Form 5792-1 will list number of "secret" documents returned for destruction, number converted to unclassified use and number and location of file cabinets in which remaining "secret" documents will be stored.

Retention of "secret" documents by any employe must be authorized by signature of a manager reporting directly to a division staff member.

The approved Form 5792-1 and all "secret" documents being retained must be presented to the control station custodian for audit. (Form 5387 must be submitted for any document not accounted for at time of audit.)

All needed forms will be provided by industrial security through departmental security representatives and control station custodians.

Employes authorized to retain classified files, after completion of phase 2 requirements, may order needed changeable-combination locks by preparing a lock receipt, Form A668, and having an AVO request signed by a supervisor.

The new locks, slightly larger and heavier than Yale combination locks now widely used, will be issued by locksmiths in Bldg. 6 at Kearny Mesa and Bldg. 2 at Lindbergh Field.

Yale combination locks will still be used for cabinets containing unclassified and General Dynamics' "private information" and "proprietary information" material.

Sharp said industrial security personnel are available to answer questions or assist with problems.

Viet Nam Veteran Will Address AIAA

Col. George Carrington will list the "R&D Interests of the Ground Soldier in Viet Nam Combat" at the Dec. 8 meeting of the American Institute of Aeronautics and Astronautics, San Diego section.

The dinner meeting will be at Haynes Streamliner, 2633 El Cajon Blvd. Dinner is at 7:15 p.m.; program at 8:15.

Colonel Carrington has just returned from Viet Nam where he was Da Nang Air Base defense coordinator. He previously was aide to Gen. Maxwell Taylor when General Taylor was chairman of the Joint Chiefs of Staff.

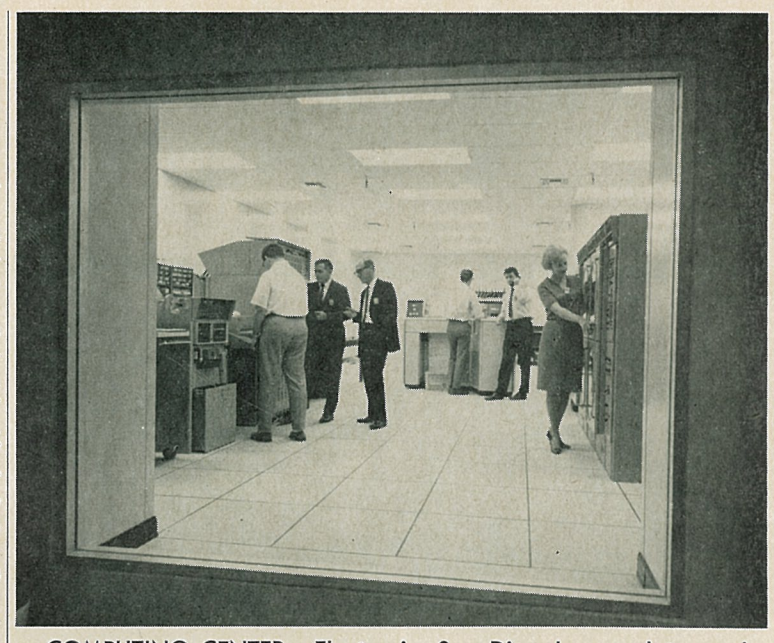
The AIAA meeting is open to non-members. Dinner cost for members is $3.25 and non-members, $4. Reservations may be made through ext. 1122 at Kearny Mesa plant.

Montague Appointed To Movie, TV Post

Robert B. Montague has been appointed chief of Convair division's motion pictures and television section (Dept. 516-0), succeeding the late Eugene C. Keefer who died Sept. 1.

Montague has been with Convair 10 years as a cinematographer, film editor and director and has directed more than 75 films including the award winning "On Target," "Friendship 7" and "One-One-Zero-Zero."

A graduate of the New York Institute of Photography, he earned the air medal with gold star as a U.S. Navy cameraman and was a member of a special Navy crew that assisted with production of 20th Century Fox's "Fighting Lady" and Warner Brothers' "Task Force."



COMPUTING CENTER—Electronics-San Diego's new data analysis lab area in Bldg. 51 is framed in large view window in lobby. A total of 5,500 square feet was involved in remodeling.

Electronics-SD Opens Data Process Facility

A modern scientific data processing facility is now in operation for Electronics-San Diego at its Lindbergh Field site.

The data systems and analysis lab has been relocated from Kearny Mesa, where it has been since spring of this year, and is now in newly-remodeled quarters in Bldg. 51 off the Electronics-SD lobby on the ground floor. It formerly had been in Bldg. 54A before the move to Kearny Mesa this year.

Most of the lower floor of the Electronics' area has been rearranged for the data processing lab and offices. In fact, a total of 5,500 square feet was involved in the remodeling, A. E. Degler, plant engineer, said. Electronics now occupies 190,000 square feet at Lindbergh Field plant.

The product test group has been moved into the area west of its former location to make room for the new center. Part of electronics assembly, namely the REINS group, is now in the super clean room.

Industrial relations offices are consolidated within the enclosed area with a new entrance from the lobby. A new fire exit into the production area has been installed in the fire wall south of the lobby.

The large 6x7-ft. display window in the lobby looks directly into the new data processing center which is built on a level with the window, 12 inches above the original floor.

The raised computer floor provides easy access to the interconnecting cables for the computer equipment, explained Degler, and allows circulation of air for better working conditions for both equipment and operators.

The center is air conditioned and humidity controlled. Ceiling and wall panels are of acoustical material, known as fissure tile, to reduce noise so that conversation within the room can be carried on in a normal tone of voice.

The center is equipped with the UNIVAC 1230 and auxiliary equipment for scientific and real-time programming. Around 40 engineers, programmers, and operators are under the direction of D. B. Wilford, chief engineer, Don Putnam, manager of data systems, and Neil Lawhead, manager of systems analysis.

The center has been programming systems design and coding for the Apollo Instrumentation Ships program and related work over the last year or more in its support of Electronics' scientific programming research.

ZERO DEFECTS CHAPTER FORMED

Joseph M. Bowers of Dept. 140-1 represented Convair division Nov. 15 at a meeting of the Southern California chapter of the American Society for Zero Defects Nov. 15 in Inglewood. H. D. Bailey of Pomona division is secretary of the recently-formed chapter.

Eight Quarterly Banners Earned

Winners of Convair division departmental Craftsmanship Achievement Award banners for the third quarter have been announced by W. E. Magnuson, Craftsmanship program chairman. They are:

Reliability—process quality engineering Dept. 144-1.

Finance — indirect budgets Dept. 198-0.

Launch vehicle programs—data management Dept. 964-4.

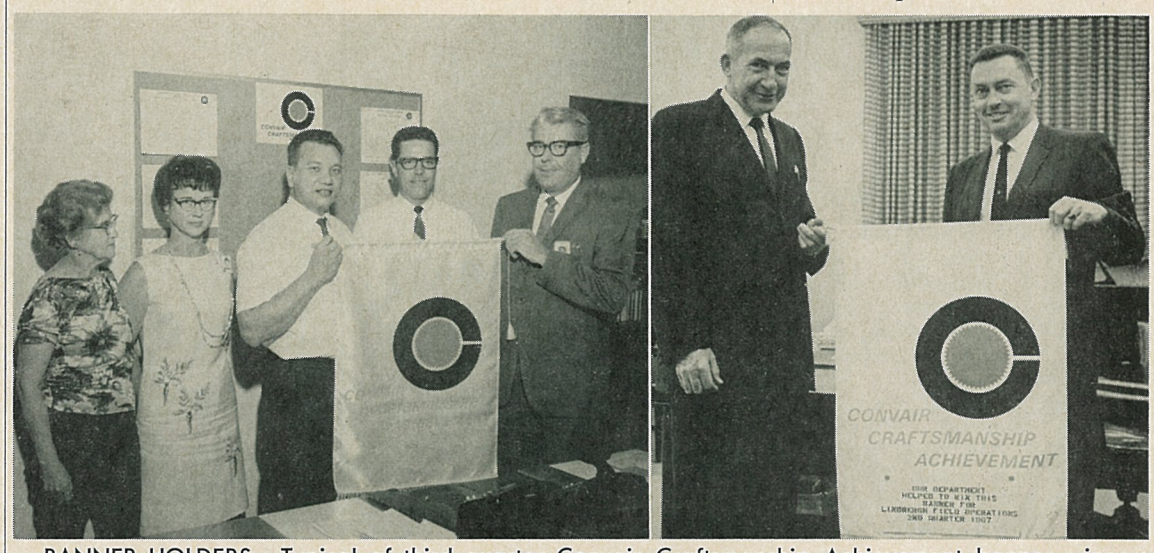
Research and engineering — ocean data station Dept. 506-5.

Kearny Mesa operations — production control Dept. 830.

Lindbergh Field operations — experimental Dept. 031.

Eastern Test Range — launch operations Dept. 979-1 and industrial relations Dept. 979-5.

Vandenberg AFB — financial control Dept. 985-6.



BANNER HOLDERS—Typical of third quarter Convair Craftsmanship Achievement banner winners were production control Dept. 830 at Kearny Mesa and experimental Dept. 031 at Lindbergh Field. In photo at left, Frank D. Robbins, right, manager of production control, presents banner to assistant foreman John Santos of Dept. 835-2 and Dan Leever of Dept. 832-3 as Cleo Partain, and Eddie Cooper watch. In other photo, Nick Keough accepts banner for Dept. 031, experimental, which led Lindbergh Field departments, from James Adamson (right), LF plant manager.

General Dynamics Men Attend Electronics Systems Briefing

More than 30 General Dynamics representatives attended a classified electronics systems advanced planning briefing, presented by the Department of the Navy and sponsored by the Electronics Industries Association, Nov. 14-16 at the U. S. Naval Amphibious Base in Coronado, Calif.

Presentations covered technological forecasting, command and control systems, tactical navigation systems, surveillance systems, weapons direction and control systems, intelligence and reconnaissance electronic warfare systems, fleet communications systems, automatic testing, and reliability and maintainability.

General Dynamics attendees included: Washington office — Joseph Cameron; Los Angeles office — J. G. Melvin; Electric Boat division — Victor Boatwright and A. J. Van Werkin; Quincy division — Don Murch and Howard Weatherlow; Electronics-Rochester — James Van Horn and Larry Forbes; Electronics-SD — James Crooks, J. A. Moody, J. N. MacInnes, E. P. Slick and Don Williams; Stromberg Carlson Data Products — James Redman and Richard Blazier; Pomona division — John Bear and Ben Lewis; Convair division — R. M. Sewall, L. E. Roby, R. A. Haubert, Orson Wade, J. C. Lievens, R. T. Moran, R. J. Reyburn, Joel Langord, R. S. Durnell, W. M. Miller, H. D. Fyffe, J. P. Rimer, R. E. Malm and P. E. Dyer.

Last of B-24s To Be Retired

Last of the Convair-built B-24 Liberators built more than 20 years ago at San Diego and Fort Worth soon will be retired from active duty.

The final B-24s of the many thousands built during World War II have been part of a marine reconnaissance squadron of the Indian Air Force, patrolling the Arabian Sea and the Indian Ocean, according to a report in the Christian Science Monitor of Oct. 19, 1967.

The planes had been left in India by the United States Army Air Corps at the close of the war.

"Some were scrapped, others reconditioned and turned over by the British to the new Indian Air Force after the country was given its independence," the news article said.

Kennedy Aircraft Given to Museum

"The Caroline," a Convair 240 aircraft used by John F. Kennedy in his 1960 presidential campaign, has been presented by the Kennedy family to the Smithsonian Institute.

The blue and white plane will be exhibited permanently at a National Air and Space Museum to be constructed on the Washington Mall.

People Mobility

Interdivisional Transfers

(Following are recent personnel transfers within General Dynamics. In parentheses are dates when individuals joined the company.)

JOHN J. ROONEY, formerly controller of the Curtiss division of Curtiss-Wright Corp. has joined Corporate Headquarters on the treasurer's staff. **RANDELL H. PROTHRO** recently retired from U.S. Navy as Assistant for Planning to the Director of Air, Surface and Electronic Warfare Development Division has joined General Dynamics as assistant to the director of military program analysis.

BLAKE W. DUCOTE (1960) from Convair to Stromberg-Carlson, Ardmore, Okla.; **RICHARD J. SUBLETT** (1965) from Stromberg-Carlson Data Products to manufacturing analyst, Electronics, San Diego; **RICHARD G. CAMP** (1960) from Electronics, San Diego to Pomona division as manager engineering quality assurance; **FRANK L. WAGNER** (1955) from Convair to buyer, Pomona; **EDWIN H. STARNS** (1951) from Convair to Stromberg-Carlson Data Products as quality control engineer; **JOHN F. CHRIVIA** (1958) from Convair to manufacturing control foreman, Pomona; **STANLEY R. SIELER** (1950) from Convair to Pomona as a reliability engineer; **GARY E. DUPLISSEY** (1956) from Convair to quality control engineer, Electronics, San Diego; **ERIC N. BEST** (1966) from Convair to dynamics engineer, Pomona; **JAMES E. COXEY** (1958) from Convair to design specialist, Electronics, San Diego; **DAVID L. TURNEY** (1967) from Fort Worth to Stromberg-Carlson, Camden, Ark. as a production engineer; **WILLIAM R. MORRIS** (1951) from Convair to design assurance engineer, Electronics, San Diego; **JAMES W. SMITH** (1961) from Convair to Pomona as missile flight test engineer; **CHARLES T. PAULSON** (1965) from Convair to reliability engineer, Pomona; **WILLIAM F. MILLER** (1956) from Convair to Pomona; **ROBERT GORDON** (1961) from Convair to Pomona as flight test engineer; **DAVID M. J. McPHEE** (1966) from Electronics, Rochester to Electronics, San Diego, as field engineer.

JOHN P. McCANN (1966) from Convair to Corporate Headquarters, New York as director of health and safety; **JURGEN AMTMANN** (1966) from Convair to senior design engineer, Stromberg-Carlson Data Products.

"And another thing . . . I wish you'd stop telling the fellows at work that your wife is 'home making pot' . . ."

Fifty From GD To Attend Meet On Missiles

Fifty General Dynamics representatives will attend a classified meeting on tactical, defensive and strategic missile systems to be held Dec. 4-6 at the U.S. Naval Postgraduate School in Monterey, Calif., under auspices of the American Institute of Aeronautics and Astronautics (AIAA).

Maj. Gen. Joseph S. Bleymaier, USAF, is general chairman and Bruce McKay of Convair division is technical program chairman. Lloyd E. Munson of Convair will speak on booster technology at a session on assessment of strategic offensive systems technology.

General Dynamics attendees include:

Corporate—C. C. Brewer, J. R. Burtt, H. T. Dillon, W. M. Kasper, Ted LeFevre, J. H. Mason, F. B. Petty Jr. and H. D. Smith.

Electric Boat—J. U. Leonard and W. E. Weisert.

Pomona division—R. L. Geisberg, G. D. Goldshine, K. Hiroshige, H. Wang, R. F. Wenzel, R. M. Wright, T. C. Patterson and R. Swetnam.

Daingerfield—R. J. Volluz.

Convair division—J. L. Bowers, G. L. Hansen, C. S. Ames, E. R. Peterson, A. H. Hoines, R. E. Bradley, G. L. Cain, C. J. Dunn, W. G. Hardy, D. J. Jones, Glenn Karel, R. J. Lutz, R. F. Mawhinney, K. E. Newton, F. D. Postula, W. A. Reinman, M. J. Aleshire, M. R. Barlow, F. J. Dore, McKay, Munson, P. J. O'Leary, R. V. Parsons, R. M. Reynolds, J. P. Rimer, R. E. Soper, P. B. Stephens, J. R. Thayer, B. T. Thompson and G. J. Vila.

IDEP Board Members Will Tour Convair

Members of the Interagency Data Exchange Program (IDEP) contracts advisory board will visit Convair's Kearny Mesa plant for a briefing and tour of the division's parts data center Dec. 6 while in San Diego for a three-day quarterly conference.

IDEP, chartered by the Army, Navy, Air Force and NASA, provides for exchange of parts test data between the military services, NASA and contractor firms.

Edward J. Reid, Convair IDEP representative at Kearny Mesa and parts data center manager, is one of 14 members of the contracts advisory board and chairman of its data retrieval committee.

W. L. Johnston, Convair IDEP representative at Lindbergh Field, and B. D. Newberry, Electronics-SD IDEP representative, also will attend the conference.

The IDEP policy board also will be meeting at the same time in San Diego.

GD Men Will Serve On AIA Committee

Two General Dynamics men will serve on the Product Support Committee of the Aerospace Industries Association during 1968.

Robert W. McGuffee, manager of logistic support for the F-111 at Fort Worth division, is newly-elected chairman of the committee and Ralph W. Emerson, support contract representative at Convair, is vice chairman of the Spare Parts Committee, one of the working committees of the main body.

The Product Support Committee is concerned with policies and procedures for assuring effective logistic support of contractor products or systems.

SURVIVAL EQUIPMENT PANEL PLANNED

Robert R. Brazell, a senior research engineer in Convair's Dept. 592-0, will moderate a survival equipment panel tomorrow and Friday (Nov. 30 and Dec. 1) at the Air Force-Industry Life Support Conference in Las Vegas, Nev.

Roger Lewis Explains General Atomic Sale

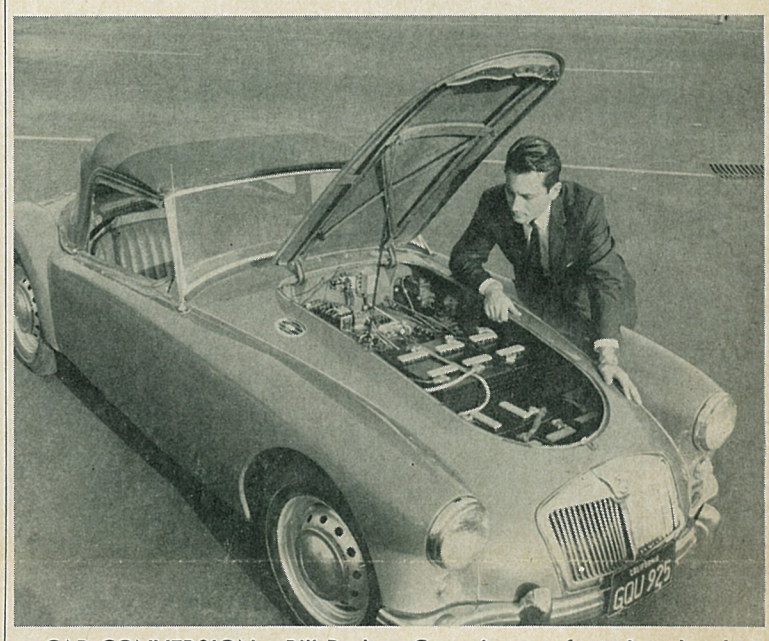
Roger Lewis, president of General Dynamics, reported to share owners recently, explaining the sale of GD's General Atomic division at San Diego to Gulf Oil Corp.

"General Atomic was created about 12 years ago, essentially as a research center for the Corporation in application of nuclear science," Lewis reported.

"Over the decade, the corporation has invested substantial funds in this research. The concepts we were working on, particularly in the generation of electrical power through high temperature gas-cooled reactor techniques, have proved successful in the 30-megawatt prototype generating station which went on stream at Peach Bottom, Pennsylvania, this year, and we had been working on a much larger plant for the Public Service Company of Colorado, with the cooperation of the Atomic Energy Commission.

"To acquire a dominant position in commercial generation of nuclear power, however, would require amounts of capital and human resources that we believe can be better used by the company in other directions. We decided, therefore, to sell the General Atomic division—including all of its programs, such as water purification, electric batteries, etc.—to Gulf Oil Corp., a company which is already deeply involved in the "energy" business, and at a time when the transfer of these activities would be most advantageous. The transaction was accomplished with the full knowledge of the AEC and our customers.

"Research and development costs of the General Atomic division have been charged against income as they occurred from year to year. The actual sale price was greater than the book value of the division and therefore represents a profit to the Company. This profit was not reflected in third quarter earnings."



CAR CONVERSION—Bill Roden, Convair manufacturing development engineer, looks at "what's under the hood" of MGA roadster he converted for all-electric operation. Its operating cost is about $1 per month.

No Smog Device!

No More Bills For Gasoline! Engineer's Car All Electric

Bill Roden, a Convair manufacturing development engineer, drives his 1959 MGA roadster to work every day—but stopping for gasoline is a thing of the distant past!

He has converted the sports car to all-electric operation by applying solid-state circuitry and his own design concepts and replacing the gasoline engine with two motors and 16 ordinary 12 volt lead-acid auto batteries.

The motors (designed to start jet engines) were purchased for $25 each from a Pasadena surplus sales store and the batteries, expected to last seven years, for $17 each from a San Diego supermarket.

Roden purchased the MG for $700 in 1965 and it took six months of spare time work to install the new system and another year to "clean up the bugs."

After a year of use for daily commuting, he considers it an ideal form of cross-town transportation—and figures the electricity for recharging the batteries each night costs about $1 a month.

The vehicle has a maximun range between charges of 60 miles at 40-miles-an-hour or 40 miles at freeway speed.

It accelerates from zero to 30 mph in four seconds and requires another 11 seconds to reach 55 mph. The car operates best on the level or down hill. A 10 per cent grade cuts the top speed to 40.

The original gas pedal is used for proportional acceleration and there is direct drive from the motor to the original drive shaft. There is no "starting," or idling or gear shifting and only noise is a very low motor "whirr."

Placement of the batteries (800 pounds) and motors (200 pounds) for balanced weight distribution has improved the vehicle's handling and "cornering" characteristics. A magnetic brake system supplements the standard drum brakes at speeds over 35 miles an hour.

Eight of the batteries are under the hood and the other eight in the trunk.

When Roden drives into his garage at home, two contact strips to the battery circuit connect with identical strips built up from the garage floor and 110-volt house current automatically begins the recharging process.

Three hours are required for full charge after an average day's use (20 miles).

Roden reports his electric auto is virtually maintenance-free now.

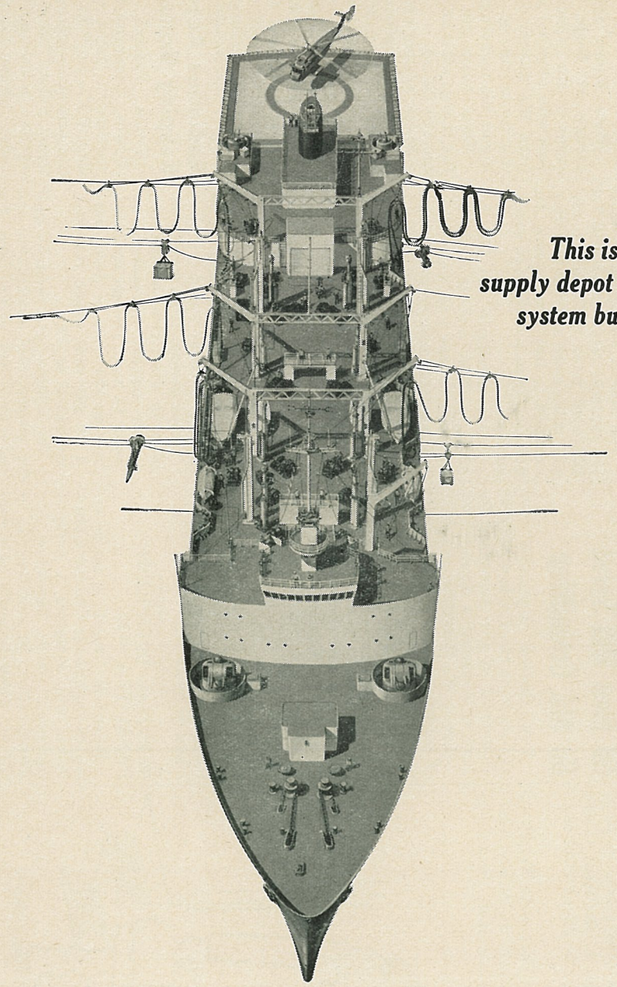
"But you do have to check the battery water—about every six months."

Since joining Convair 4½ years ago, Roden has designed several electrical controls for resistance spot-welding and electron-beam welding applications.

Radiation Record Keeping Explained

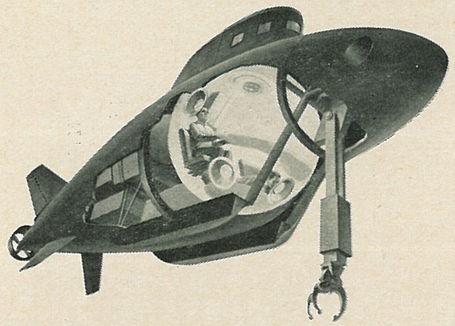
Frank Paschal, FW health physics administrator, recently presented a paper on "Radiation Record Keeping" at a meeting of the aerospace section of the National Safety Congress and Exposition in Chicago.

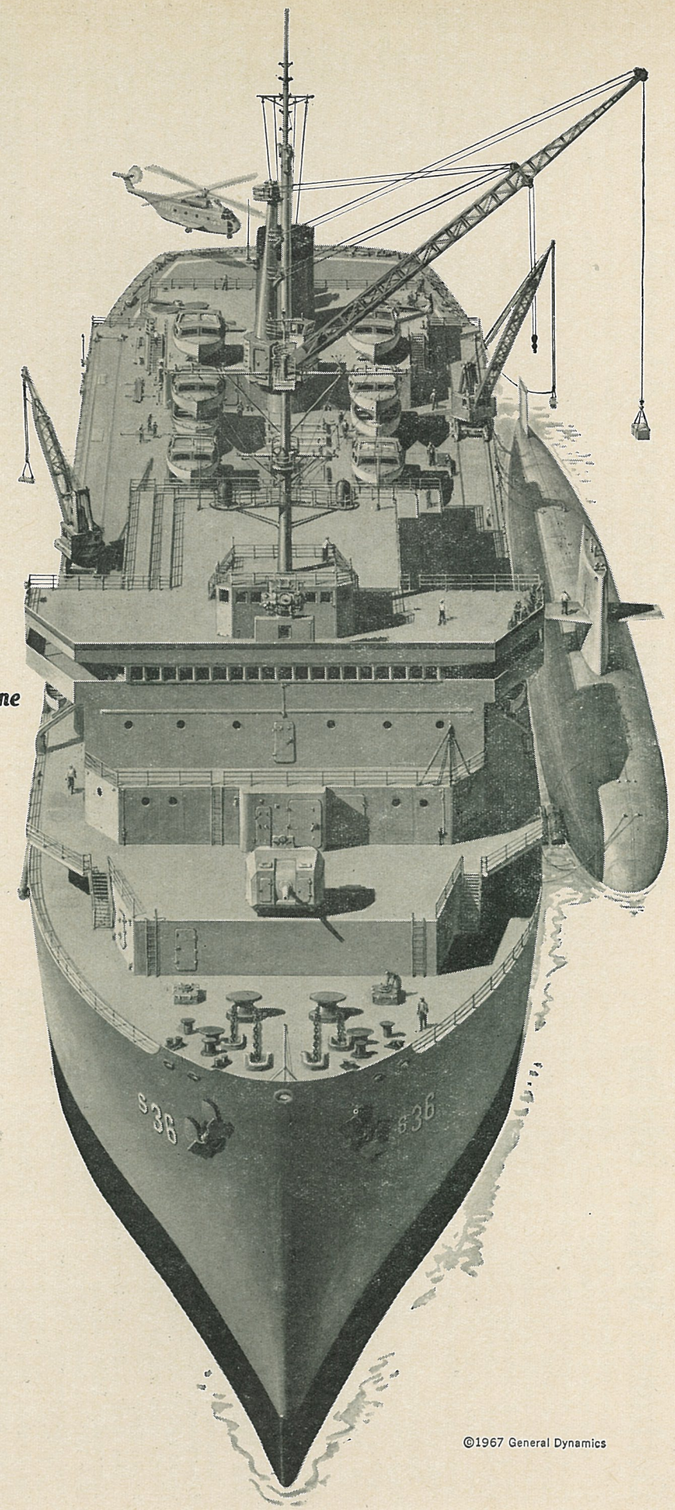
Over 19,000 health and safety personnel from all over the world attended the four-day meeting.



This is not just a ship. It's a supply depot for ships at sea— a marine system built by General Dynamics.

This is not just a submarine. It's an under-sea research laboratory— a marine system built by General Dynamics.





This is not just a ship. It's a mobile base for nuclear submarines—a marine system built by General Dynamics.

The 664-foot USS Lawrence York Spear is the first in a new class of mother ship for nuclear attack submarines. Like all major systems, it started with a requirement.

Its requirement is to provide logistic support for 12 submarines at sea, and alongside services for four submarines. The ship will supply everything from shaving cream to ammunition.

The contractor for such a total system must, first of all, understand the requirement. He must be able to design, and develop, and procure, and integrate whatever is necessary to build the total product that meets the requirement. His ultimate responsibility is to deliver a complete system that will work as it should when it must.

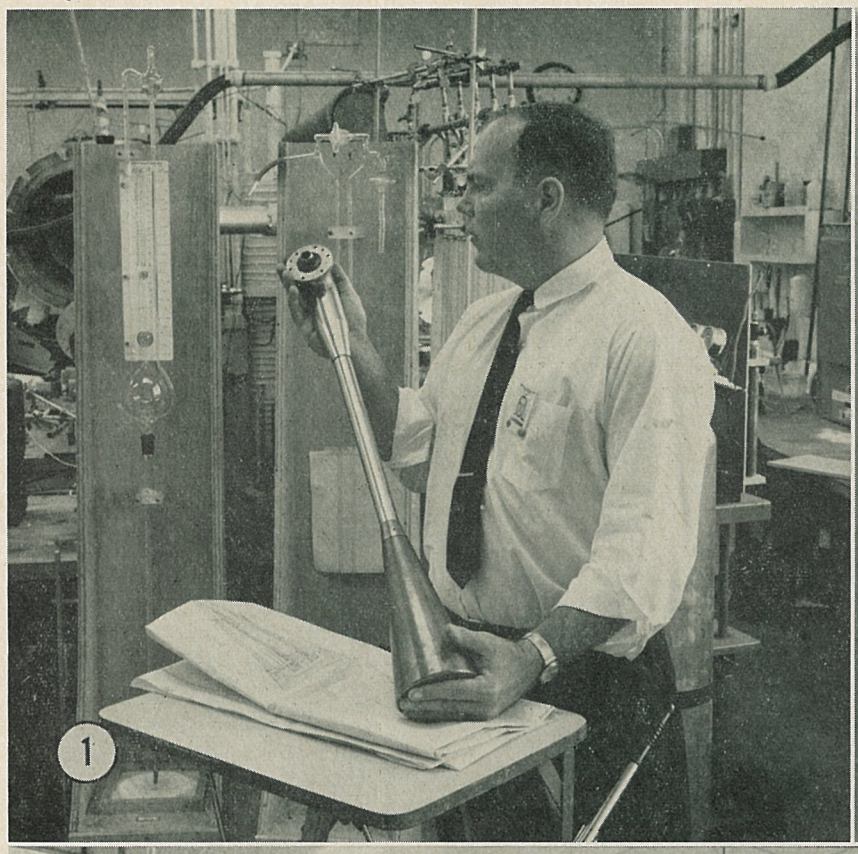
For 68 years, General Dynamics has accepted that responsibility.

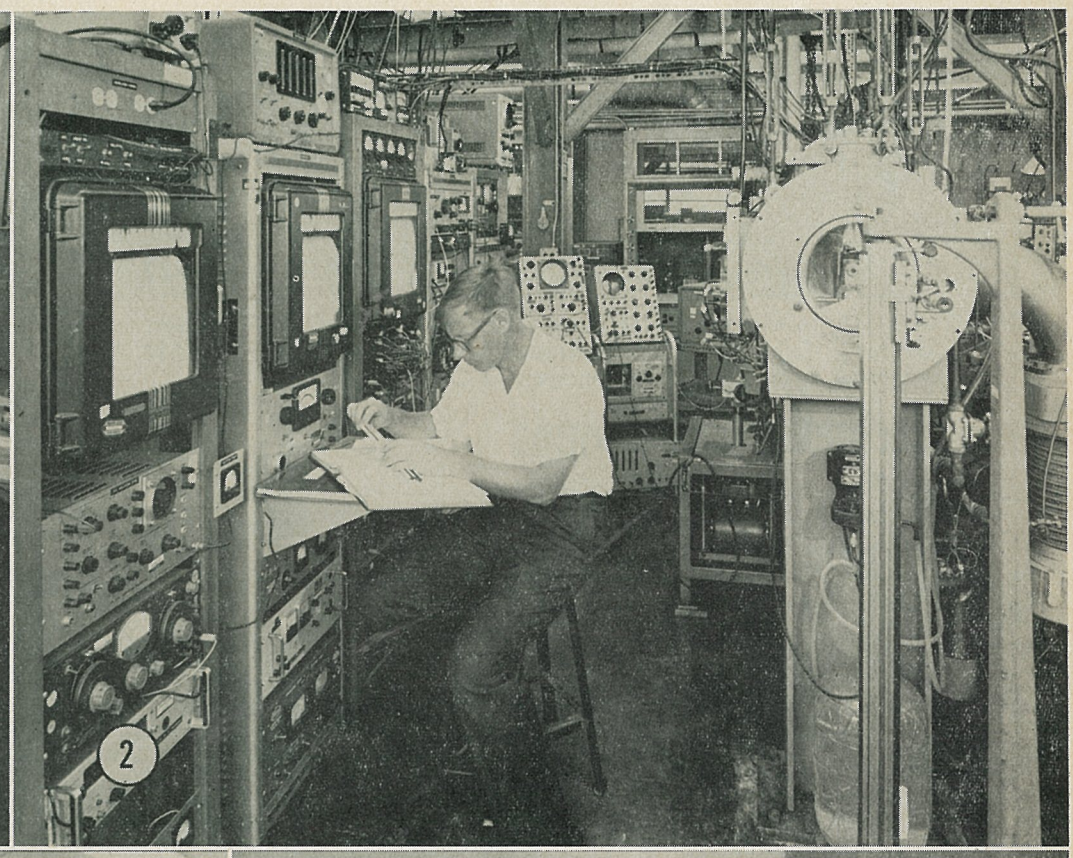
GENERAL DYNAMICS

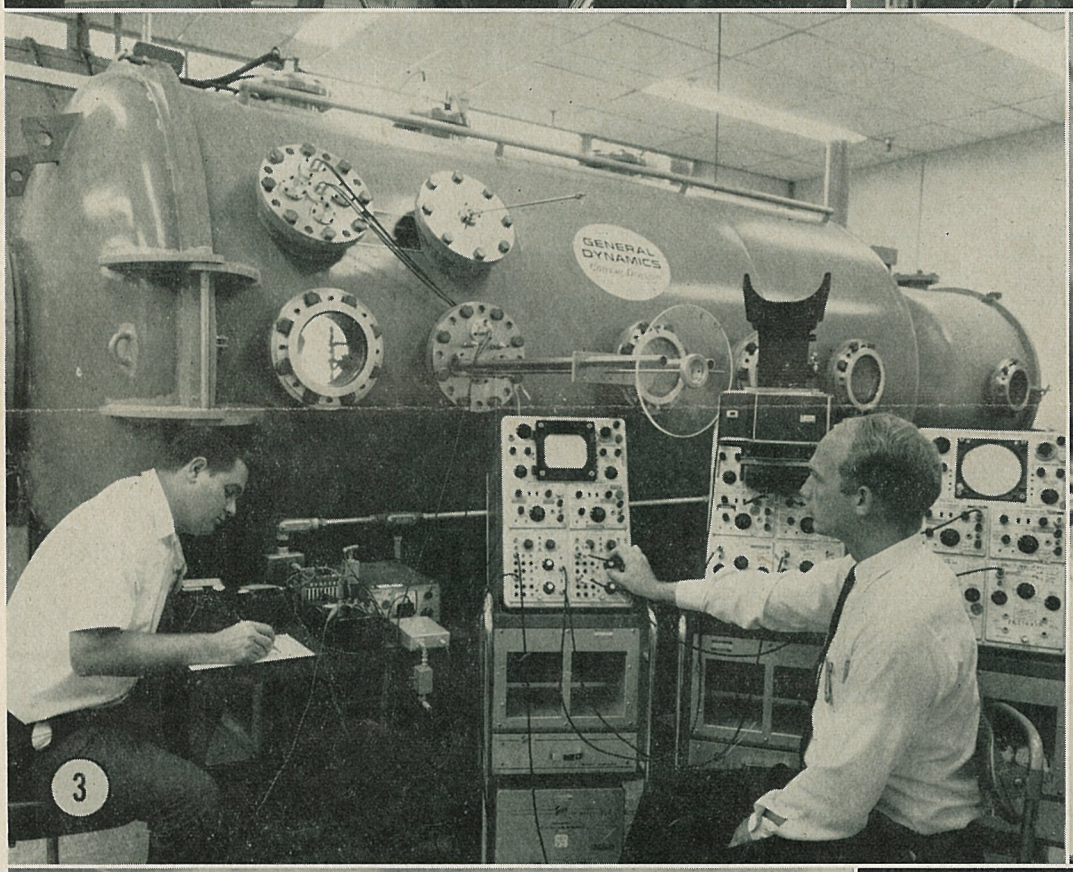
©1967 General Dynamics

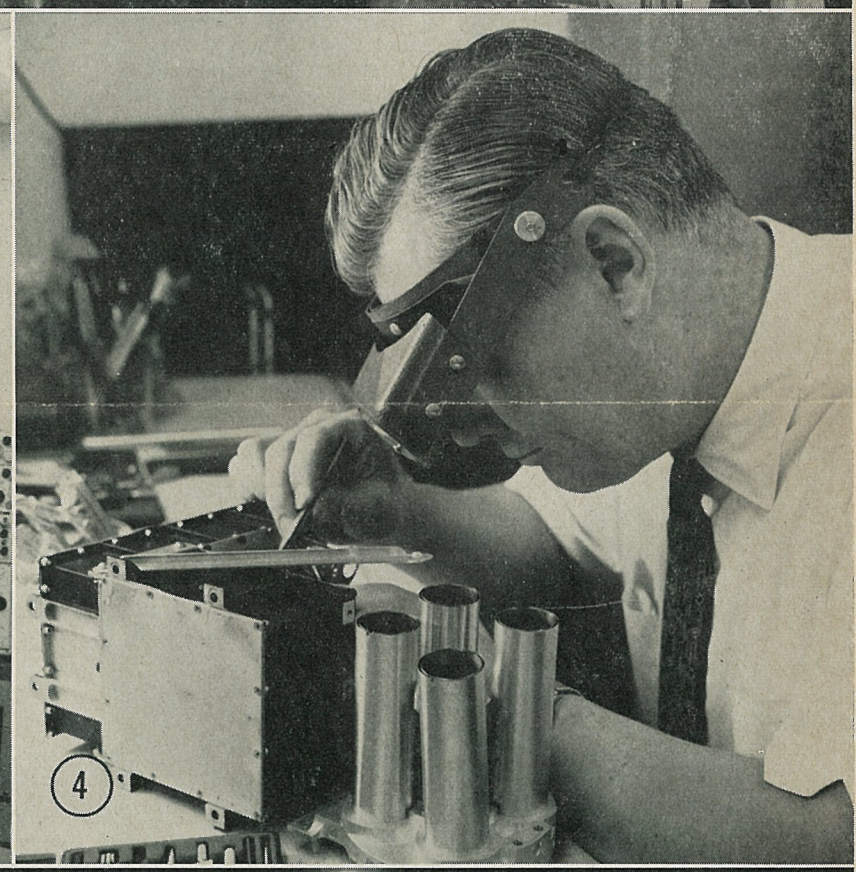
Space Sciences Research at San Diego Covers Wide Range of Study

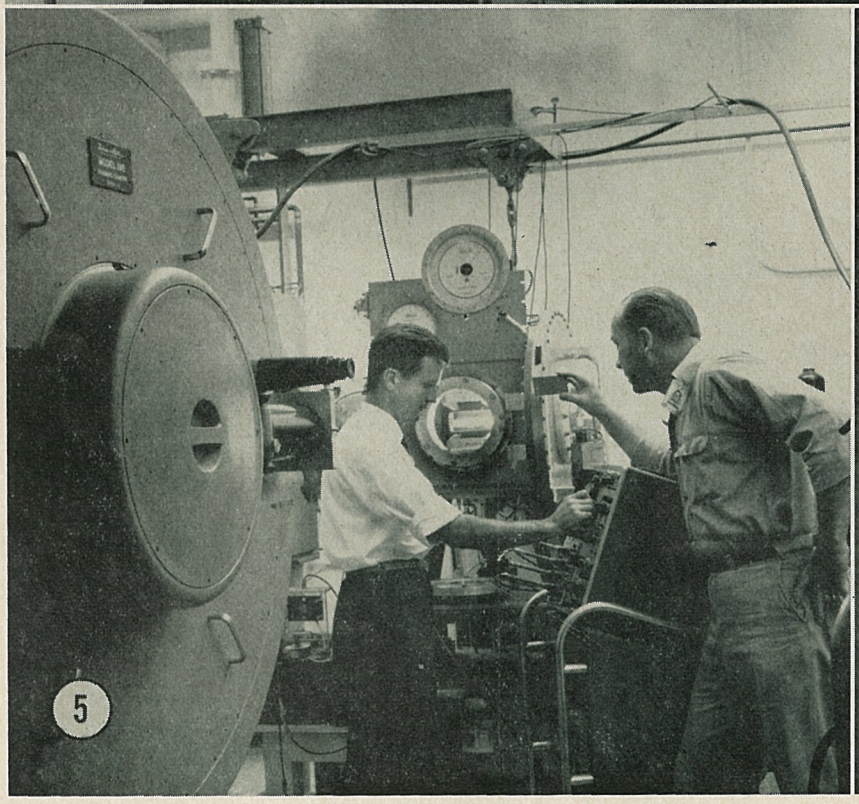
Convair division's space sciences Dept. 596-0 conducts a wide range of pure and applied research as well as advanced development programs, using laboratories and research facilities at Kearny Mesa, Lindbergh Field, and the General Dynamics Harbor Drive Facility in San Diego. Various categories of physics, physical chemistry, and fluid dynamics are studied and applied. Dr. Kenneth A. Stone is manager and the department is part of Convair's research and engineering organization. Photos show space sciences personnel working on some of the department's current research projects.

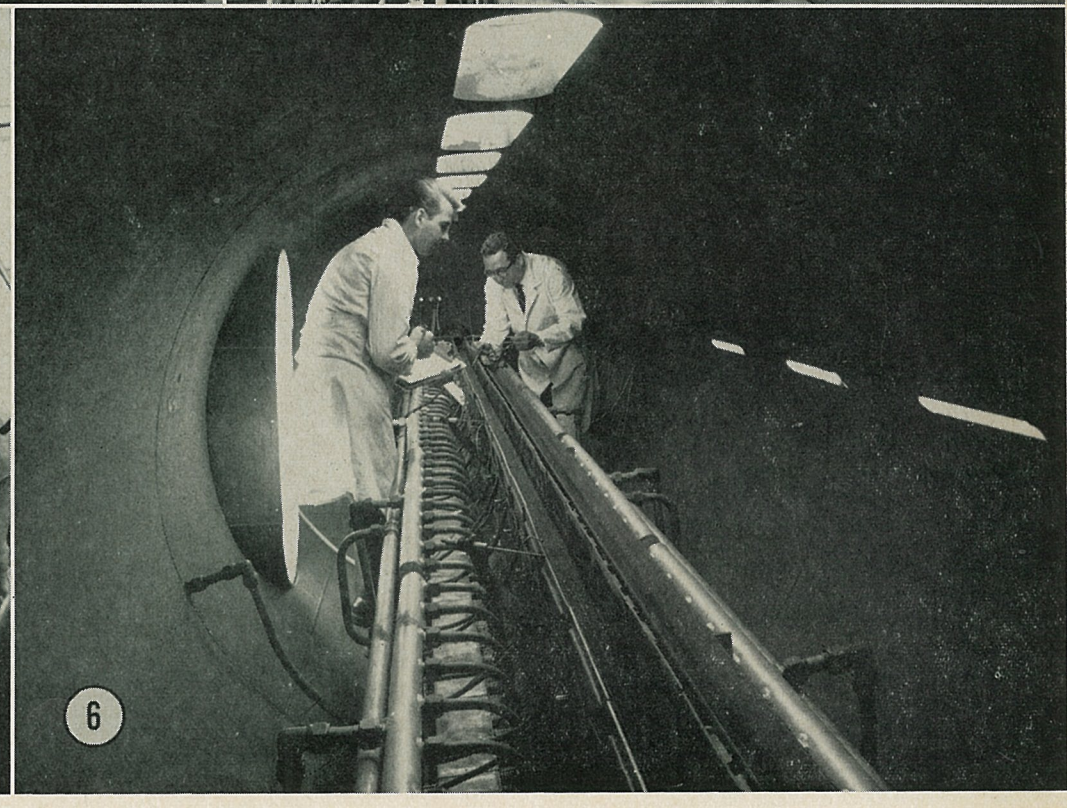












(1) Convair-designed model for measurement of forces and movements induced by exhaust plumes from research engines is examined by F. P. Boynton, staff scientist in the aerothermochemistry area.

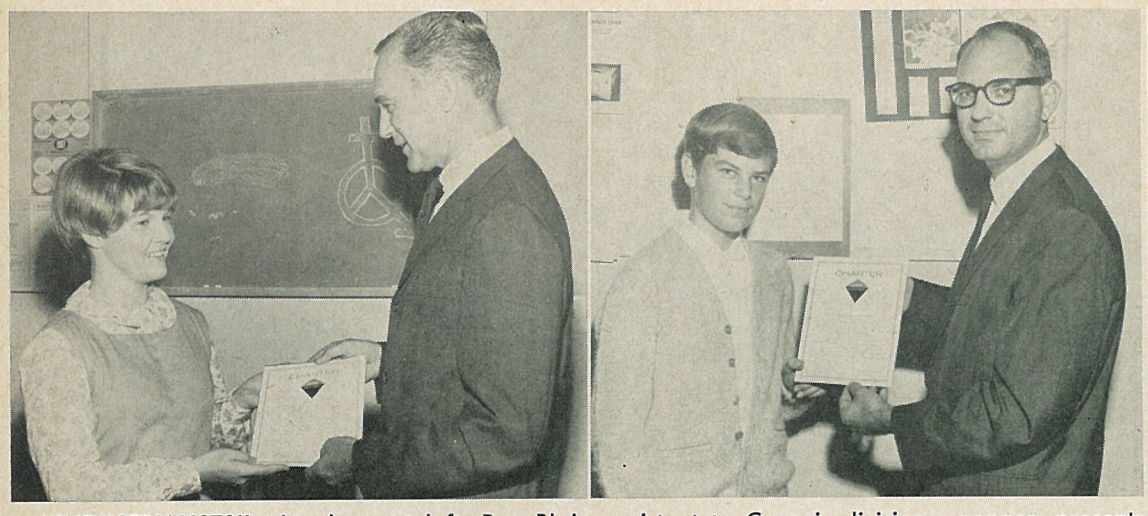
(2) Microscopic details of high-energy-yield chemical reactions relevant to high-specific-impulse chemical propulsion are studied by Dr. Erhard Rothe, staff scientist, in molecular beam lab at Lindbergh Field.

(3) Magneto plasma dynamic engine is fired in nitrogen gas environment in space-simulation chamber in research and development study on electric propulsion thruster for interplanetary space vehicles. Dr. A. V. Larsen, senior staff scientist, adjusts instrumentation while Orley Neller, left, test engineer, records voltage readings.

(4) Gas surface experiments probe developed by Convair for use on NASA Orbiting Geophysical Observatory-F satellite is adjusted by John Harrold, senior electronics development technician, in satellite surface physics lab.

(5) Basic research on erosion of arc electrodes is conducted in gas environment test chamber in plasma physics lab. Dr. Rolf Dethlefson, left, checks test equipment while Jerry Tinkham, research engineer, inspects arc through dark glass.

(6) Rocket plume radiation studies are conducted through use of 20-foot hydrogen-oxygen long burner in chamber at Harbor Drive facility. Doug Suttie, left, test lab engineer, takes data on nitrogen gas flow from burner while Carlos Abeyta, also a test lab engineer, adjusts thermocouple.



"INDUSTRIALISTS"—In photo at left, Ray Blair, assistant to Convair division manager, presents JAM/CCO charter to Esther O'Donald, president. In photo at right Don Campbell, president of JANCO, receives charter from Jay Farrar, Management Club vice president.

Junior Achievement Groups Receive Charters, Lay Plans

Two Junior Achievement groups of teen-age businessmen, sponsored by the Convair Management Club, have received their charters for the year, elected officers, and chosen products.

JANCO, made up of 14 young people between the ages of 15 and 19, will market mosaic candleholders. (The N in their firm name stands for knick-knack!)

Convair advisers, all Management Club members, are Reginald Becker, management; Russ Wisma, production; and Art Braidic, sales.

This JA company meets on Wednesday evenings at the Junior Achievement headquarters, 3729 University Ave.

The second group, JAM/CCO, will make mahogany or cork coasters, hence the M/CC in the title. Seventeen members meet Thursdays.

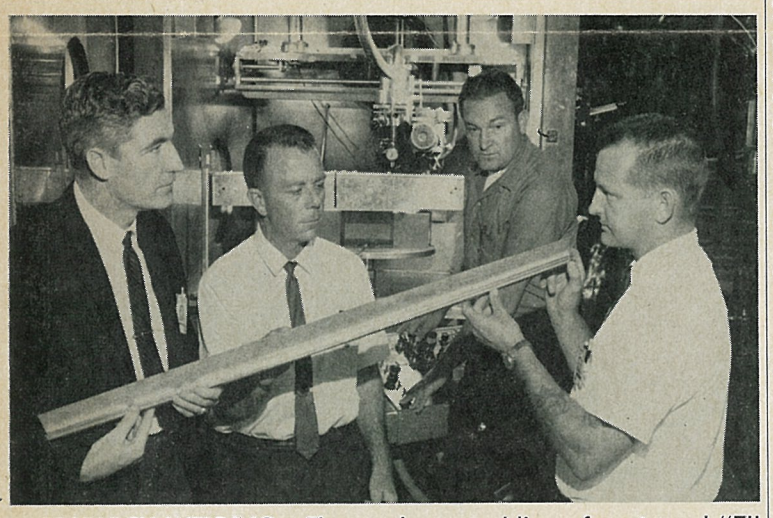
Advisers are Don Menard, management; John Bailey, production; and Ernie Chavez, sales.

Each JA company is organized and operated in the same manner as a full-scale corporation. They elect officers, select their own products, sell stock, set up production, plan distribution, keep books, pay themselves, and pay dividends—if they make a profit.

Gerry Christ is Management Club manager for youth activities.

Convair Son Killed In Viet Nam Action

Pfc. Raymond Garcia, 21, son of Ray F. Garcia of Convair's Dept. 250-5, was killed in action Nov. 18 while serving with the 173rd Airborne Brigade in Viet Nam. He was a 1964 graduate of Kearny High School and attended Mesa College before entering the Army.



RESEARCH WELDING—Electron-beam welding of contoured "T" section for structure to be tested under simulated hypersonic cruise vehicle operating conditions is checked by, from left, Raymond McNamara, Earl Christian and Gordon Lundquist, while Richard Junghans, welding operator (background), looks on.

Electron-Beam Welding Used On Contoured Rib Sections

Electron-beam welding is being used at Convair's Kearny Mesa plant to produce contoured "T" rib structural sections from 718 nickel alloy similar to those that may be used in future recoverable space launch boosters and hypersonic cruise aircraft.

Raymond C. McNamara, a senior design engineer in structural design Dept. 512-2, said the 718 alloy is being used in the Company-funded research and development program because it can withstand high temperatures for prolonged periods.

McNamara said a 7 x 3½ x 2-foot test structure being fabricated, equivalent to three rib sections of an airplane wing, will be run through an extensive series of tests at the Harbor Drive facility to "proof out" design and analytical methods under loads and temperatures that would be encountered under actual operating conditions.

Earl Christian, a manufacturing development research engineer in Dept. 491-0, said use of electron-beam rather than tungsten inert gas welding is minimizing warpage and producing a "cleaner" weld.

"It also is two or three times faster and reduced our tooling costs about 40 per cent," he said.

Gordon Lundquist, a Dept. 491-0 manufacturing development engineer, assisted with processes and tooling being used and Richard Junghans of Dept. 759-0 operates the welder.

Lundquist said the electron beam is being focused to produce a narrow weld. Although temperature at the beam's focus point may be 3,000 degrees or higher, the "heat affected zone" in the material is very narrow. A thin "filler wire," also of 718 nickel alloy, is used in the welding process.

"This is the first time we have used the electron-beam welder for making burn-through welds on 'T' sections such as this," Lundquist said. "We are pleased with the results being obtained."

Convair also used 718 nickel alloy in fabrication of a 6,000-gallon liquid hydrogen test tank, which was completed earlier this year under an Air Force contract.

Last of Atlas Ds Launched In ABRES Shot

Atlas 94D, last of the Convair-built D-series Atlas ICBMs, was launched down the Western Test Range from Vandenberg AFB this month—boosting an experimental re-entry vehicle in the Air Force's Advanced Ballistic Re-entry Systems (ABRES) program.

The launch was the 197th for an Atlas D. Sixty-nine were used in ICBM development and proofing, 74 as space program boosters and 54 in other programs such as ABRES and Nike-Target.

D-series ICBMs were the first of the Atlas "family" to enter Strategic Air Command (SAC) operational inventory, with the first going to Warren AFB, Wyo., in 1959. The last were "retired" from SAC in 1965.

Space missions for which the D-series vehicles have been used as boosters included Project Mercury manned flights, Able and Ranger lunar probes, Surveyor lunar landings, Mariner Venus and Mars probes and Orbiting Geophysical Observatory launches.

Atlas E and F-series ICBMs, which followed the D-series into SAC inventory, are now being updated and used as "bonus boosters" for ABRES, Nike-Target and Orbital Vehicle One satellite launches.

The Atlas ICBMs were forerunners for the more versatile Atlas Standard Launch Vehicle-3 (SLV-3) and the uprated Atlas SLV-3A and SLV-3C boosters now coming off the assembly line at Convair's Kearny Mesa plant.

Fifty-six SLV-3s were built for Air Force and NASA missions. Of the 52 launched to date, 50 were successful for overall reliability of 96 per cent.

The first of the new SLV-3C boosters was used in the Surveyor 5 mission in September. The first SLV-3A will be booster for NASA's Orbiting Geophysical Observatory-E early next year.

Wisdom on Board of Cal. Mfg. Assn.

M. V. Wisdom, Convair division director of industrial relations, was elected to the 30-member board of directors of the California Manufacturers Association (CMA) at the organization's annual meeting Nov. 9 and 10 in Los Angeles.

CMA membership is composed of manufacturing, fabrication, processing and research firms and the association has more than 1,000 industry specialists serving on its seven standing committees.

Swedish Visitor Holds Briefing

Dr. Uno Lamm, electrotechnical director of the ASEA electric company of Sweden, gave a presentation at Convair division's Kearny Mesa plant Nov. 10 while on a tour with a Swedish Trade Council technical and scientific mission.

Lamm discussed a new family of ASEA-developed lightweight air-borne transducers for measuring torque thrust and weight. Karel J. Bossart, Convair technical consultant, was host.

Space Assembly Tasks Rehearsed Under Water

Physiological requirements of space assembly tasks are being studied by Convair life sciences Dept. 592-0 personnel under contract from the Air Force aeropropulsion laboratory at Wright-Patterson AFB in the first major test program in the division's new underwater test facility at Kearny Mesa.

A Gemini spacesuit, formerly used by Astronaut Neil Armstrong and pressurized with water for null-buoyancy or simulated "zero gravity" conditions, was used in first tests in the series to measure energy output required in performance of specific elements of a space assembly task.

Later tests, scheduled to run through February, will include evaluation of data obtained in more extensive space assembly work.

Primary objective of the program is gathering information on man's physical capacity to assemble and maintain structures in space.

Robert R. Brazell, a senior research engineer, is program manager and William A. Shafer, M. D., is medical monitor.

Four Air Force representatives from Wright-Patterson AFB were at Convair for two weeks for the initial tests.

Capt. John B. Catiller, Air Force program monitor, and 1st Lt. Carlan Silha, both of the aeropropulsion laboratory, served with Convair's Gary Thomson as test subjects.

Capt. Gary Reid of the AF aeromedical laboratory was present to observe the Convair-developed spacesuit water-pressurization technique. A/1C Melvin Tays, also of the aeromedical lab, was Gemini spacesuit technician and a safety diver.

Brazell, Thomson and Richard Wolf—all of Dept. 592-0—will serve as test subjects for the remainder of the program.

"Astronaut extra-vehicular activity in the Gemini program showed that performance of assembly tasks in space will be exhausting work," Brazell said.

A Convair-developed underwater bio-monitoring system being used measures functions such as the test subject's heart rate, pulse, breathing rate, body temperature and per cent of carbon dioxide in exhaled air and enables Dr. Shafer to determine when tests should be halted or terminated due to fatigue.

In initial tests, each subject carried a 10-foot structure while moving along an 18-foot rail, then joined the structure to a "receiver."

Convair Assists In Saturn

Convair division personnel and facilities played an important part in the highly successful first flight of the Apollo Saturn V Nov. 9 from Cape Kennedy.

The Complex 39 operational TV system designed, furnished and installed by Convair served as "eyes" for launching the 363-ft. space vehicle. Convair had a team of 12 providing technical support for the system.

Convair also served as integrating contractor for TEL-4, the Merritt Island central telemetry station used in the countdown and for monitoring of flight telemetry.

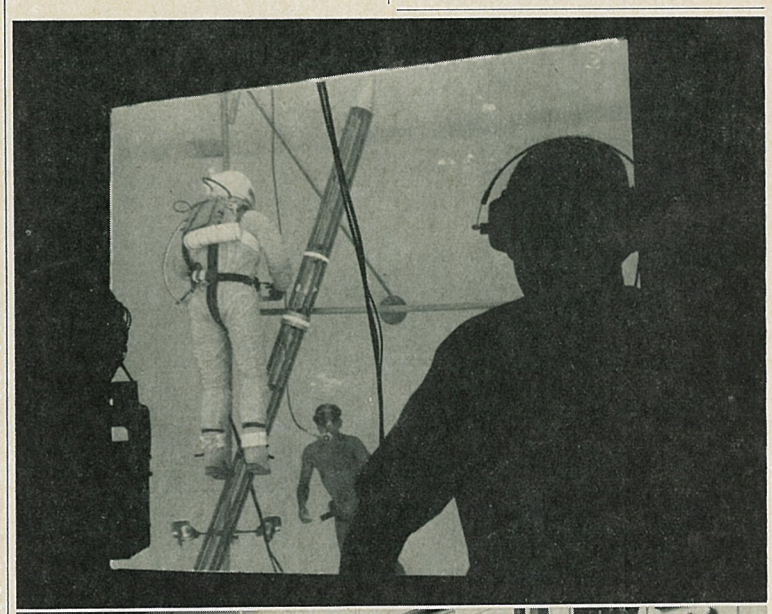
Three of the liquid hydrogen fuel relief, vent and relief and fill and drain valves on the Saturn 4-B third stage of the vehicle had been qualified for flight in extensive tests at Convair's Test Site B and Kearny Mesa plant.

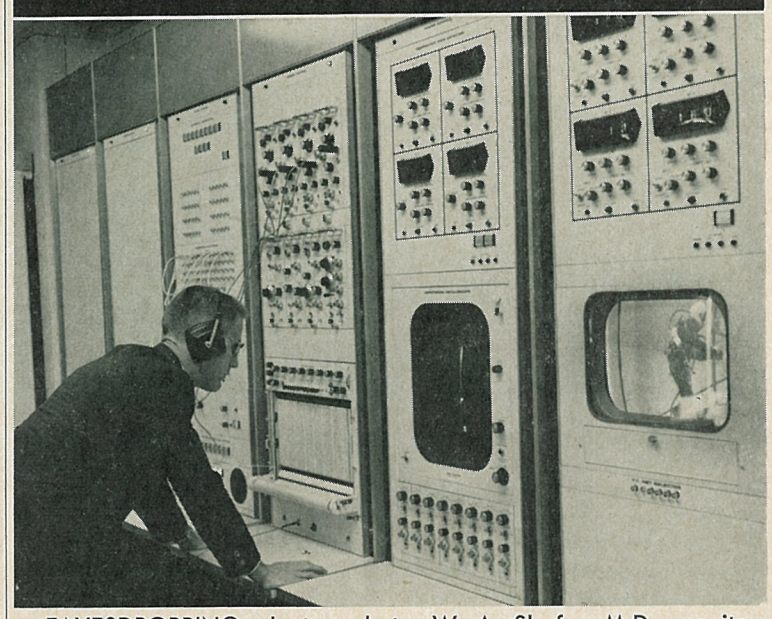
In the TEL-4 project, Convair personnel integrated a logic and control system with more than 350 racks of government furnished equipment.

"Each of the valves we tested performed perfectly during the flight," Robert W. Swanson, Convair program manager for Douglas test programs, said.

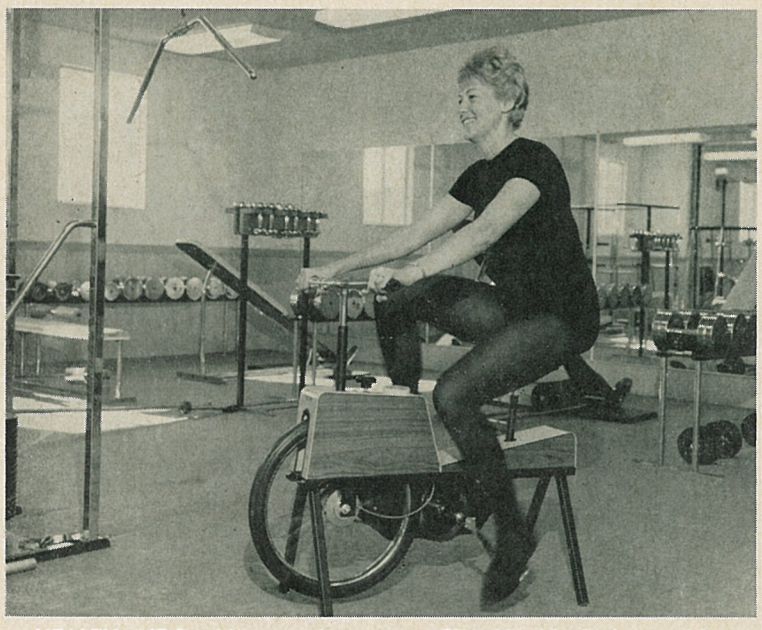
NASA COLOR FILMS MADE AVAILABLE

Two new 15-minute NASA color films, "This is NASA" and "Your Spaceport Visit," are available to employes for showing at civic, fraternal, club and youth group meetings. Reservations can be made with L. E. Olson, ext. 1821 KM.





EAVESDROPPING—In top photo, W. A. Shafer, M.D., monitors diver's breathing, etc., during underwater test. Below, John Steadman, life science research engineer, watches recordings. Note TV screen.



HEALTH AIDS—New equipment at CRA Health Club to aid employes and family members keep trim include exercycle being used by Mrs. Robert Bruce.

Number of CRA Health Runners Reaches 80, Includes Women

More than 80 Convair employes — including a dozen women — are now running regularly in a CRA Health Club program to reduce weight and improve physical fitness.

Ralph Mansfield, Health Club director, said most run three days a week, although some with weight problems are "working out" five days a week or more.

The Health Club staff provides individually-tailored exercise programs upon request with types of exercise recommended depending on whether spot weight reduction, general physical conditioning or training for sports is desired.

Typical of those improving their physical condition through running is William R. Walker, Dept. 454-0 foreman, who runs 3.6 miles each weekday and longer distances on weekends.

When he began a year ago, Walker was overweight and had high blood pressure. He has taken six inches off his waist and in a recent physical examination his blood pressure was that of a 16-year-old.

Walker is one of several already planning to enter the first U. S. Masters Track and Field Championships for men over 40 scheduled July 19-21, 1968, in San Diego. He has been running more than 20 miles weekends and plans to enter the 26-mile marathon.

Six-month trial Health Club memberships are $12 for employes and $18 for families and annual memberships are $18 for employes and $27 for families. There is a $10 annual membership for runners using only shower and locker facilities.

The club has both men's and women's saunas and full-body-length heat lamps for both. Use of the heat lamps for five minutes is equivalent to three hours of sunlight.

Bruch Bertsch New Sports Car Head

Bruce Bertsch will head the CRA Sports Car Club for the 1967-68 club term following recent election of officers.

Others installed at the Convair group's dinner-dance Nov. 10 at the Admiral Kidd Officers Club were Marvin Jensen, vice president; Ray Simpson, treasurer; and Nancy Jensen, secretary.

Judicial board members are Ed Berlin, Jack Gallant, Judge Penick, Spud Riggs, Gerry Sturm, and Sid Weiner.

Next meeting will be Dec. 13 in the executive dining room at Lindbergh Field plant.

College Looks For Faculty Members

Grossmont College is expanding its evening program in engineering technology and has a limited number of openings for instructors in engineering materials and processes, electro-mechanical instrumentation and microwave fundamentals.

Minimum requirements are a bachelor's degree and three years experience. Application forms are available at educational services, ext. 1931 KM.

JONES BECOMES 10,000TH MEMBER

Norman W. Jones, a microfilm cameraman in Convair division's still photo Dept. 519-0 microfilm center at Kearny Mesa, became somewhat of a photo-industry celebrity recently when he became the 10,000th U.S. photographer accepted for membership in the Professional Photographers of America, Inc.

Riders Collect Silver Trophies

Gayle Dvoracek and Davey Watson won the silver trophies for their performance in CRA Riding Club's last show of the year Nov. 19.

Gayle was awarded a silver bowl for high point standing in equitation events. Davey won the silver goblet for overall high point score in gymkhana. Judge was Pat Lunday of Lakeside.

Shirley Berry was ring steward and Floyd Branscom was in charge of the ring crew. Ken Smith was timer; Steve Payne, announcer. Adelaine Donahoo and Mickey Underwood manned the entry booth.

Mrs. Berry was chairman of the Branding Iron breakfast which preceded the Sunday show at the CRA Missile Park. Over 45 were served. Chuck Payne, Jane Nash, and Mrs. Donahoo cooked.

50-Mile Cycle Tour Scheduled on Dec. 2

CRA Bicycle Club members have scheduled a 50-mile cycle tour Dec. 2 that will take them through Poway, Escondido and Rancho Santa Fe. Participants will meet at the CRA Clubhouse at 7:30 a.m. Joe Olander, phone 273-0791, is ride leader.

A 25-mile Kearny Mesa ride also is planned Dec. 16 with riders to leave the Clubhouse at 9 a.m. and with John Gacho, phone 278-0781, as ride leader.

Short scenic rides are continuing each Sunday with cyclists leaving the Islandia Hotel parking lot at 2 p.m.

Radio Hams Plan Tour of Station

CRA Radio Club members and guests will tour the Chollas Heights Naval Radio Station on Dec. 7, meeting at the station gate at Zero and Meridian streets at 7:30 p.m.

For additional information on the tour, phone Alex Halyburton, program chairman, ext. 1846 KM or (home) 277-6779.

CRA Calendar

(For information on CRA activities call CRA Headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Dec. 5. Call ext. 1071 LF or 3322 KM.)

☆ ☆ ☆

ARCHERY—Shoot Dec. 3. Al Stone, ext. 586 LF.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park. Call Al Van Norman, ext. 1864 KM.

BICYCLE CLUB—50-mile ride Dec. 2 to Escondido. Leave CRA Clubhouse at 7:30 a.m. 25-mile ride Dec. 16. Leave CRA Clubhouse at 9 a.m. Short rides continue each Sunday, 2 p.m., from Islandia Hotel.

BONAIR FLYERS—Meeting Dec. 5, CRA Clubhouse.

BRIDGE—Play every Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS—Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

CHORUS—Rehearsals open to GD employes and families each Tuesday, 7:30 p.m., CRA Clubhouse. Call Jim Pate, ext. 3034 KM, or Jo Anne Bray, ext. 1091 LF.

DELTA DIVERS—Christmas party Dec. 8.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

GARDEN CLUB — Meeting Dec. 6, 7:30 p.m., Floral Bldg., Balboa Park.

GOLF—CRA tourney Dec. 2-3, Chula Vista course.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Mondays through Fridays; 10 a.m. to 5 p.m. Saturdays. Call ext. 1111 KM.

HI-FI/MUSIC—Meeting Dec. 12, 7:30 p.m., CRA Clubhouse.

ICE SKATING — GD family skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

PISTOL CLUB—Shoot Dec. 10, 9:15 a.m., SD Police Pistol Range.

RADIO CLUB — Tour of Chollas Heights Naval Radio Station, 7:30 p.m., Dec. 7. Call Alex Halyburton, ext. 1846 KM.

RIDING CLUB—Christmas party Dec. 16. No December meeting.

ROCKHOUNDS—Meeting Dec. 13, 7:30 p.m., CRA Clubhouse.

SCULPTURE — Workshop sessions Mondays, 7:30-10:30 p.m., CRA Clubhouse.

SKI CLUB—Trade night tonight Nov. 29, 7 p.m., CRA Clubhouse. Mammoth Mt. trip Dec. 2-3. Meeting Dec. 5, 8 p.m., Catamaran.

SPORTS CAR CLUB—Meeting Dec. 13, 7:30 p.m., executive dining room, Lindbergh Field.

SQUARE DANCING—Dynamic Eights dance every Thursday evening, 8-10 p.m. CRA Clubhouse.

TOASTMASTERS — Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB — Meeting Tuesday, Dec. 5, 7 a.m., executive dining room, Kearny Mesa.

TRAILERS—Travelers meet Dec. 5, 7:30 p.m., CRA Clubhouse. Call Virg Marshall, ext. 741 LF.

TROPICAL FISH—Meeting Dec. 12, 7:30 p.m., CRA Clubhouse.

WOMEN'S GOLF — Christmas party Dec. 6 at Hanalei Hotel.

Warren Walker Wins Pistol Club Turkey

Warren Walker won the turkey at the CRA Pistol Club shoot Nov. 12 at the San Diego Police Pistol Range.

High scorer in the master class was Roland Schneider with 295. Joe Williamson was second with 288.

A. E. Kampmann shot 259 to top the expert class. Bill Worthington was runner-up with 253.

Individual scores of the center fire team shoot were: Schneider, 269; Williamson, 268; Walker, 239; and Kampmann, 231.

There are openings now in the club for anyone interested in pistol shooting. For information call Williamson at ext. 470 LF.

Convair Sons Reach Region Grid Finals

A Convair-coached Pop Warner football team, undefeated throughout the season, made it to the finals of the region but went down before the onslaught of the Las Vegas Bombers Nov. 18 in the Mother Goose Bowl.

Over half of the 28 on the team rolls were Convair sons. Bob Wood of Dept. 833 was defensive coach and John Volper of Dept. 553-2, team administrator. Wood's son, Ken, was place kicker. Gary Volper played end.

The top Junior Bantam team was San Diego County champion.

Salvage Schedule

Next employes sales day at Convair salvage yard at the Lindbergh Field plant, adjacent to Gate 5, will be Saturday, Dec. 9. Hours are from 8 a.m. until noon. Admittance is by ID card.

ON THE BEACH—Photos of Bonair Flyers' fly-in to Rosarito Beach show (top) Jim Moody and small daughters ready for horseback ride on beach; others are Bonnie Adams, Janet Taylor and Steve Adams; (center) Mrs. Taylor and Dave Druif roasting wieners; (bottom) Mrs. Adams, private pilot, climbing into cockpit of Cessna 172, one of planes carrying group to Baja California.

Convair Chorus In Full Swing

Driver-of-the-Year honors go to Chorus is now in full swing preparing for a busy schedule of appearances during the Christmas season.

Some 35 vocalists gather each Tuesday evening at 7:30 p.m. in the CRA Clubhouse at Kearny Mesa to rehearse for engagements at local hospitals and service organizations. So far the schedule reads: Sunday, Dec. 17, 2 p.m., Navy Hospital; Tuesday, Dec. 19, 7 p.m., Mercy Hospital; Wednesday, Dec. 20, 7 p.m. University of California Hospital; Thursday, Dec. 21, 7 p.m., Doctors Hospital.

There is still time for newcomers to join the group before the holiday performances. The CRA Chorus is open to any Convair employe or member of his family, over 16, who enjoys singing.

For further information contact Jim Pate, ext. 3034 KM; Jo Anne Bray, ext. 1091 LF; or Walt Minor, ext. 1111 KM (CRA Clubhouse) after 4:30 p.m.

Close Finish Marks Divers

Three top teams of the Delta Divers wound up the season with only one point difference between their scores.

Phil Swanson's team led the parade with 260 points for the year. Jorge Zorrilla's team was second with 259, and in third spot was Bob Nicholas' team with 258.

Members of the winning team were Bill Howard, Jim McGinnis, Cliff Kickbush (CRA commissioner), and Jesse Manzano.

Diver-of-the-Year honors go to Rod Johnson with 74 points.

Runners-up, in order, were Howard, Zorrilla, McGinnis, Ken Swan, and Nicholas.

Howard scored highest at the last interclub dive of the year at Cardiff Nov. 12 with a 34.5-lb. catch of edible fish and a 7.4-lb. lobster.

Awards will be given at the Dec. 8 Christmas party, which will take the place of the monthly meeting.

Flying Group Pays Visit to Rosarito

Three planes carrying 14 Bonair Flyers winged to Rosarito Beach south of Tijuana along the Baja California coast Nov. 12 for an all-day outing on the beach and a look at the small airfield.

Carrying passengers were a Cessna 172, a Cherokee Six, and a Piper Tri Pacer, owned by Jim Moody, club member.

The CRA flying group spent the day swimming, hiking, horseback riding, and cooking on the beach.

Next club meeting will be Tuesday, Dec. 5, 7:30 p.m. at CRA Clubhouse.

Two Win Turkeys In Women's Golf

Freda Magargal and Nell Bartlett took home turkeys from the Nov. 13 links tourney of the GD Women's Golf Club while May Dean Schell won the trophy in Flight A and Margaret Clark the Flight B trophy.

Winners of gift certificates in Flight A were Ann Plummer and Mabel Dunn. Winners in Flight B were Doris Parker and Jean Hawthorne.

Twenty-four members played in the "turkey shoot" on the back nine holes at Rancho de los Penasquitos Country Club.

The December tournament will be cancelled in favor of the club's annual Christmas party Dec. 6 at Hanalei Hotel, Mission Valley. Next monthly tourney is set for Jan. 13 over the Whispering Palms 18-hole course.

Wayne Evanses Win Bridge Club Series

Winners of CRA Bridge Club's first fall series game Nov. 10 were Mr. and Mrs. Wayne Evans. The Thanksgiving party master point event Nov. 17 was won by Mr. and Mrs. M. Ishihara.

All interested employes and associate contractors and wives have been invited to play duplicate bridge at 7:30 p.m. Fridays in the CRA Clubhouse.

CHORALERS—Dr. John Williams, far left, leads Convair Chorus at rehearsal in CRA Clubhouse. Group is preparing Christmas concert for appearances at local hospitals during holiday season.

Frank Davis Discusses Misleading Tactics Employed by Critics of F-111

(The following story which appeared Nov. 7, 1967 in the Fort Worth Star-Telegram, is reprinted by permission.)

By DON McDOWELL

General Dynamics-Fort Worth president Frank W. Davis last week told a group of writers how to assassinate the character of an airplane.

First, he said, you talk about weight. Take a figure mentioned in an idealistic sense and compare it with the actual projected weight of the airplane. Express the difference in tons — tons sound heavier.

Talk next about range of the aircraft. But limit your discussion to one portion of a mission. Don't tell anybody you aren't talking about a complete mission.

* * *

MOVE ON to how high the plane can fly. But limit such discussion to a mission the airplane was not designed to fly and use terms familiar only to a few.

Explain that the plane costs much more than had been announced originally. But use early planning estimates on the one hand and contract prices on the other. Take care not to point out that the contract prices include costs of developing seven models for three nations.

Say the airplane is behind schedule. But say nothing about scheduling limitations that were built in and anticipated.

* * *

POINT WITH relish at test pilots' listing of improvements needed. But don't acknowledge that test pilots are paid to find areas where improvement is needed. By all means don't let on that the list you are making is much like any list from any aircraft development program.

Make it a policy to use numbers. Lots of numbers. Be sure they are accurate numbers. But use them out of context.

These, Davis said, are tactics that have been employed with much success by critics of the F-111.

His remarks were made in General Dynamics' first rebuttal to invective heaped upon its product.

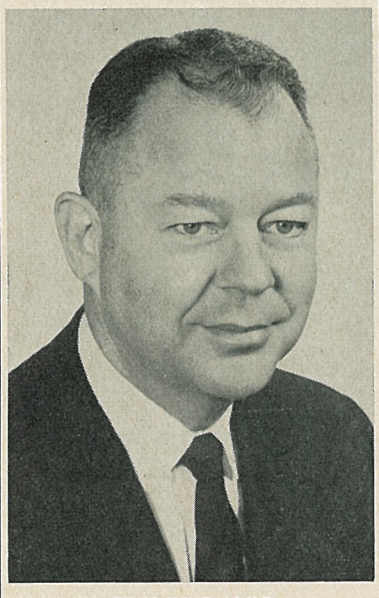
* * *

LISTENING were about 20 aviation writers, most of them from out of state.

Davis' major premise was that critics of the F-111 have created what he termed a "context gap."

He said the critics are "too smart to be inaccurate." They use accurate figures out of context to leave inaccurate impressions, Davis asserted.

Example: It's been said and written than an F-111 operating at full military power and carrying a full bomb load cannot fly over Pike's Peak. Since Pike's Peak is 14,000 feet high, the impression left is that the F-111 loaded with bombs is a ground hugger.



FRANK DAVIS

* * *

THE DEFINITION of "full military power" is omitted. It is simply the thrust available without using the afterburner. On the F-111, full military power is only 45 per cent of the available power.

With use of the afterburner, the F-111 can fly much higher than Pike's Peak.

Davis pointed out that critics made it appear flying over that mountain at that power setting was part of the assigned task of the F-111. They didn't really say it, though. They just left the impression.

Davis went through the list of popular criticisms of the F-111, giving with each complaint the company's rebuttal:

* * *

—**"THE F-111** design was the second best."

Two official groups studied the proposals of the TFX finalists, GD and Boeing.

One of them, the Evaluation Group (composed of 284 civilian and military experts) gave GD a score of 175.6 and Boeing a score of 172.1.

The other, the Source Selection Board, awarded points according to the importance of certain criteria and came up with so-called "weighted scores." GD's score was 662.4 and Boeing's was 654.2.

Only the Source Selection Board, however, made a recommendation, and it chose to disregard its own findings and recommend the Boeing proposal.

Secretary of Defense Robert McNamara studied reports of both groups and selected the highest scoring proposal, General Dynamics.

"Why hasn't this been brought out?" a writer asked.

"I don't believe anyone asked them that question," Davis said. "All the questioning has been done by members of the opposition."

* * *

—**"THERE HAS** been price escalation since General Dynamics got the contract."

Davis said General Dynamics' first bid in 1962 for 23 research and development airplanes was $478.9 million. The contract as negotiated in 1964 was for $476.9 million — $2 million less. "You call this escalation?" he asked.

He said the company's first bid in 1965 on a production contract for 431 F-111s was $1.889 billion. The contract as negotiated in 1966 was for $1.653 billion — $236 million less. "This is hardly price escalation," he said.

The contract was renegotiated this year to provide for 62 additional production airplanes. The contract for 493 airplanes amounted to $1.821 billion.

* * *

—**"THE NAVY** version of the F-111 is hopelessly overweight."

The F-111B is heavier than GD originally proposed to build it.

This primarily is because the turbofan-afterburning engine developed for the plane (the engine, like the variable sweep wings of the airplane, represents an aviation first) consumes more fuel than expected.

Fuel is heavy. Bigger fuel tanks are heavy. The F-111B thus is heavier than it would be if less fuel were required.

But because weight has been shaved elsewhere and more lifting capability has been designed into the airplane's wings, the extra weight is not as important as critics imply, Davis said.

Competitors for the TFX contract were supplied a list of carriers from which the Navy planned to operate the F-111B.

"The F-111B can operate from all carriers it was intended to and no modifications to the carriers are necessary to handle its weight," Davis said.

* * *

—**"THE F-111 IS** far behind schedule."

Davis said the first research and development airplane was delivered ahead of schedule. The average delivery date for each of the 23 research and development planes was within 17 days of the contract date.

The Navy model will be ready by the time the Phoenix missile system being developed for it is ready. The F-111B will be operational on schedule, Davis said.

* * *

—**"PERFORMANCE OF** the F-111 is unsatisfactory."

These were the objectives of the F-111 program: An airplane with intercontinental range and supersonic penetration capability that would be operational from short fields, suitable for aircraft carrier use, equipped with accurate navigation and bombing systems, highly reliable, one that would require minimum maintenance and would have nuclear and conventional bomb capability and be safe to fly.

In all but one area — aircraft carrier suitability — the plane has been tested and found acceptable. Carrier tests haven't begun, but approach speeds much slower than will be required for carrier landings have been demonstrated.

* * *

—**"THE F-111** was supposed to replace the F-105 and the F-4. It is not good enough to replace them."

Davis said the F-111 has twice the range with twice the payload of the F-105. It is 20 per cent faster, can land and take off in half the space and has a navigation system eight times more accurate than the F-105's.

He said the F-111 can loiter twice as long on fleet patrol as the F-4 while carrying 1½ times the missile load, has three times the missile range, is capable of six times as many "kills" per missile salvo, has an operational radius 500 miles greater than the F-4 with the same bomb load and has a landing approach speed 15 to 20 knots slower.

He indicated the F-4 and F-105 aren't going to be phased out while there's a war in Viet Nam. Every airplane capable of inflicting losses on the enemy is needed there.

* * *

—**"DESIRED** commonality between Air Force and Navy versions was not attained."

From the F-111A and F-111B have come five additional versions to meet a variety of requirements for three nations, Davis said.

This is commonality as originally intended. The commonality concept involves more than interchangeability of parts, he indicated.

Separate development programs for the F-111A, F-111B, F-111C (the Australian model), F-111D (an Air Force version to incorporate avionics developed since the start of F-111A production), the FB-111 (strategic bomber version) and the RF-111 (reconnaissance version) "would have cost a lot," Davis said.

He said studies are being made to expand further the mission capabilities of F-111s. He cited these examples:

The F-111D will have better air-to-combat capabilities. The present Air Force model is not intended to be an air-to-air fighter. It is a ground support and bombing craft.

The Navy version, however, is an air-to-air craft. Work is under way to give it greater ground support and bombing capabilities.

PRODUCTION LINE—More than 40 F-111As are now in various stages of major assembly at Fort Worth division. Initial definitive production contract announced by Department of Defense includes 331 variable-wing fighters for Tactical Air Command.

McANULTY APPOINTED FABRICATION SUPT.

Organizational realignments and appointments effective Nov. 13 were announced by G. E. Sylvester, vice president-operations.

J. O. McAnulty was appointed superintendent of fabrication. Reporting to him are: G. G. Hiscock, machine shop general foreman; M. B. Fuhrmann, processing general foreman, and B. T. Griffin, mechanical assembly acting foreman.

R. A. Williams is acting superintendent of special processes and electro-mechanical assembly. Reporting to him are S. P. Aznavoorian, special processes foreman, and H. W. Johnson, electro-mechanical assembly foreman.

Both McAnulty and Williams report to A. T. Seemann, factory manager.

Of those named, McAnulty is the only newcomer to Pomona division. He joins General Dynamics after 24 years with Garrett AiResearch Manufacturing Co. where he was general plant superintendent at different times at both Los Angeles and Phoenix.

Ellis Will Attend Fall Conference

G. M. Ellis, Pomona division manager of quality administration, attended the fall conference of Electronics Industries Association held at Century Plaza Hotel, Los Angeles, last month.

Ellis is chairman of the EIA's quality assurance committee and represents the government products division of the association on its quality and reliability engineering committee. During the conference he spoke to the industrial parts marketing committee on "Quality Assurance Considerations in the Systems Manufacturer/Parts Supplier Relationship."

You Can Become Regular Bond Buyer For 50 Cents a Week

Text For Economics Course Never Same Two Days in Row

Convair employes attending a Monday evening "industrial economics" course at the Kearny Mesa plant have a unique and ever-changing textbook—The Wall Street Journal.

David Chigos, course instructor and an education specialist in Dept. 130-3, uses the Journal to add a "new dimension" to a normally stilted subject. He says every phase of economics comes to light in the publication within a six-month period.

Articles in the paper serve as springboards for in-depth discussion and study on subjects such as the Federal and World Banks and the International Monetary Fund, the Sherman and Clayton Anti-Trust Act, the Tennessee Valley Authority, mass transportation, nuclear energy and reasons why companies prosper or fail.

The class, offered by Convair as part of the division's "Management Upgrade" program in conjunction with San Diego Junior Colleges, is one of 10 required for the Certificate in Supervision.

Cost for the courses is $1.50 per semester student body fee plus textbooks and related materials.

Students in the "industrial economics" class range from factory workers to scientists with PhD degrees.

Before joining Convair recently, Chigos was officer in charge of the Navy instructors training school at the U. S. Naval Training Center in San Diego. He previously served as navigator on the guided missile heavy cruiser Columbus.

NEW-TYPE TEXTS—Students in evening "industrial economics" class at Convair's Kearny Mesa plant use newspaper as "textbook." Instructor David Chigos presides.

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 20, No. 25 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, December 13, 1967

Roger Lewis Extends Christmas Greetings

Once again Christmas is upon us, and another year is almost over.

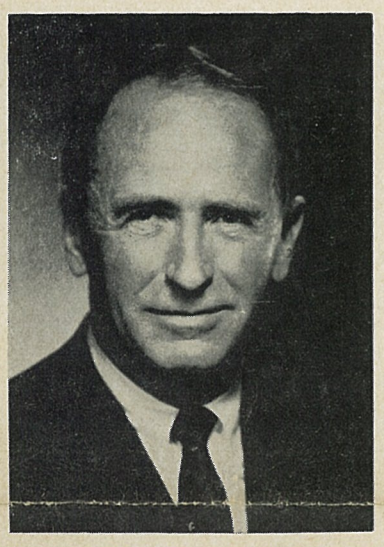
It has been a good year for advances in medicine and the arts, successes in space and other areas, advances in national and personal prosperity.

But it also has been a year dimmed by the continuing struggle for lasting peace. Luckily no world conflagration has been ignited, but lesser conflicts have marred our lives. Vast sociological problems remain with us.

Yet there is more hope this Christmas than in many Christmases past.

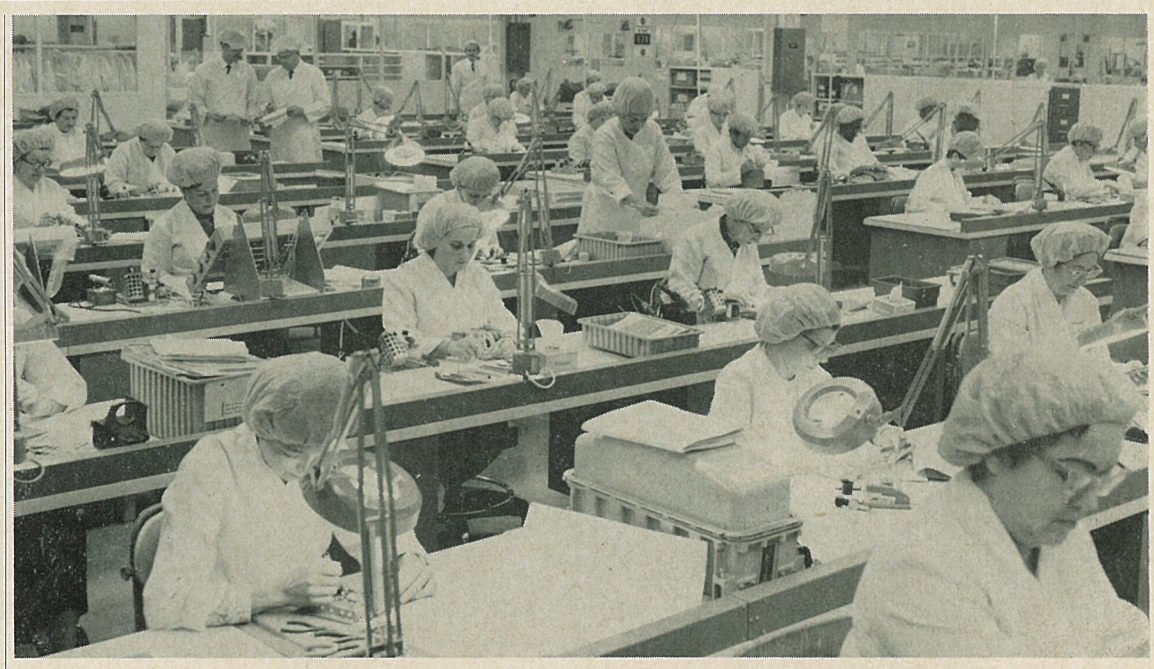
National and world problems have been identified. Men are working to solve them realistically, seeking ways of alleviating or eliminating them with greater vigor and understanding. This is true of all our generations. Even the youngsters who confuse us at times can inspire us and serve as a necessary conscience.

Meanwhile, let us be thankful this Christmas for what we have today, for our families and for our nation. But let us be resolute as well, resolute that we can and will constantly change our world for the better.



In that hope, may I wish all the employes of General Dynamics and their families a happy, thoughtful holiday in the spirit of Christ and a bright New Year ahead.

Roger Lewis
President



CLEAN ROOM—Typical of electronics facilities due for expansion at Convair is this Dept. 780-1 area where Atlas autopilot components are assembled. They are used in Atlas E, F, SLV-3A and SLV-3C autopilots.

General Lauds Launch Record

Lt. Gen. J. W. O'Neill, commander of the Air Force Space and Missile Systems Organization, in a letter to Jack L. Bowers, Convair general manager, has commended Convair on another successful year of Atlas space booster launches.

"With one more Surveyor mission yet to be performed in January, it is gratifying to realize that the most recent launch of Surveyor 6 on 7 Nov., 1967, completed the primary objectives expected to date from all the Surveyor series in support of the Apollo program," General O'Neill said.

"This becomes even more significant when one realizes this launch was the 37th consecutive highly successful launch and that Surveyors 5 and 6 were accurately placed in orbit by the new version of the Atlas, the SLV-3C."

Looking forward to 1968, General O'Neill said he is "anticipating a continuation of this success in the Atlas space booster program."

★ ★ ★

ATLAS-CENTAUR LAUNCH SLATED

Convair division's Atlas-Centaur 15 next month will send Surveyor 7, last of the series, far south of the "Apollo belt" on the moon for photography and soil analysis in the vicinity of the crater Tycho.

Tycho is in a rugged mountainous area and lunar photographs show long lines seeming to radiate for hundreds of miles from the crater.

(Continued on Page 2)

Electronics Facility Expansion Planned

Convair division's Dept. 780, electronics manufacturing factory, plans to almost double its work area in Bldg. 33 at Kearny Mesa and add additional personnel for production of electronic ground support equipment for Fort Worth division's F-111 aircraft and Pomona division's Standard Missile programs.

Frank B. Kemper, electronics manufacturing factory manager, said area occupied will be expanded from 74,000 to 120,000 square feet and a "considerable number" of new employes will be added to the current 400-man work force.

The expansion will give electronics manufacturing occupancy of the northern two-thirds of Bldg. 33, from Cols. A through E, with the exception of an area now occupied by engineering laboratories. Several other functions are being relocated.

Kemper said Convair will serve as subcontractor for production of "several million dollars worth" of ground support equipment for the F-111 and Standard Missile with production scheduled through 1969 and possible follow-on work through the early 1970s.

"We are fortunate to have the manpower, space and capital equipment needed to do a good support job while there is an overload on similar facilities in Pomona, Electronics-Rochester and Fort Worth departments," Kemper said.

Some of the new Dept. 780 employes will begin as electronics assembler trainees.

Jack Croft, chief of educational services, said the first class of 10 trainees is receiving a week of classroom instruction to be followed by 12 to 16 weeks of "on the job" training.

(Continued on Page 6)

$21 Million Contract Awarded By NASA For Centaur Support

Convair division has been awarded a $21,113,688 contract by NASA's Lewis Research Center for management and engineering services for the Centaur launch vehicle.

Harry S. Wurtz, contracts manager for Convair launch vehicle programs, said the cost plus award-fee contract covers services during the latter part of this calendar year and through Sept. 30, 1968.

The new contract will cover more than a million manhours of work for services including engineering, administration, management and development activities to support the Centaur program with design evaluation, design proof-testing, logistics planning and programming.

Included will be engineering support for Orbiting Astronomical Observatory, Applications Technology Satellite and Mariner Mars missions and mission-peculiar modifications and support for production contracts under which Centaur vehicles 16 through 20 are being fabricated.

Tests covered will include Centaur-OAO structural tests, Centaur-ATS hydrogen peroxide attitude control systems tests and Centaur-OAO fairing jettison support tests.

The contract also covers manufacturing operations support for engineering, including small machining and fabrication tasks, reliability control and quality assurance, logistics management, Centaur vehicle product reviews, vendor data control and reporting of new technology.

COMMENDATION—E. J. Huntsman (right) accepts Department of Army certificate of appreciation from Convair Division Manager Jack L. Bowers in behalf of Convair Service Center for successful completion of recent conversion project.

Convair Service Center Earns Dept. of Army Commendation

Convair Service Center has been commended by the Department of the Army for successful completion of Project Crazy Cat, a classified program.

E. J. Huntsman, Service Center manager, accepted the Patriotic Civilian Service Award in behalf of all of the Service Center personnel at a presentation last month. Convair Division Manager Jack L. Bowers presented the award.

The recommendation, signed by Brig. Gen. James H. Keller, read in part:

"Such a task could be accomplished only with the strong personal leadership and outstanding managerial ability of Mr. Huntsman as Project Manager. From his untiring efforts and the technical expertise of the Convair Service Center evolved a fully operational system which is now performing its mission in defense of our national security."

Next GD/NEWS Issue Will Appear Jan. 3

This issue of the GD/NEWS (Dec. 13) will be the last published in 1967.

Because of the conflict of year-end holidays with the publishing schedule, GD/NEWS will not be issued on Dec. 27. Instead, the schedule will be slipped one week. The next issue will come out Jan. 3.

The normal every-other-Wednesday schedule will continue thereafter.

'DCAS' Forum Slated For Jan. 13 at College

The second "DCAS Forum" to be held in the United States is scheduled Jan. 13 at Mesa College in San Diego with the San Diego section of the American Society for Quality Control as host.

More than 250 government and industry leaders from Southern California and Arizona, including many from General Dynamics divisions, are expected.

Forum panelists will include Col. F. D. R. Sparrevohn, director of quality assurance for the Los Angeles DCAS region, and Glenn Soares, deputy executive director of quality assurance for DCAS headquarters, Cameron Station, Va.

More F-111 Assist Work Authorized For Convair

Convair division's assist work for its sister division at Fort Worth on the F-111 has been increased by a $3½ million work authorization for fabrication of testing equipment for checkout of aircraft penetration aids.

Convair will construct five complex penetration aids test stations which will be used to test the F-111 radar homing and warning system and electronic counter measure (ECM) system. A follow-on order of 12 may be forthcoming, according to John S. Berggren, F-111 AGE program manager at Convair.

(Continued on Page 2)

Log Book Entries

Service Emblems

CONVAIR

Service emblems due in December.

Trirty-year: Dept. 031, B. A. Shourds; 049, H. J. Komos; 130, S. Galasso; 149, L. A. Brugger.

Twenty-five-year: Dept. 001, R. L. Shinn; 031, R. St. Lathrum; 102, W. J. Dewey; 110, Kathryn R. Small; 144, N. W. Lenten; 202, R. D. Marks; 250, M. L. Merritt; 300, E. B. Castaneda; 401, J. H. Crockett; 732, C. E. Alexander; 756, J. M. Rice; 761, W. C. Faulkner; 831, R. P. Earnest; 835, W. A. Dickenson; 978, J. DeHope; 979, P. L. Dudney.

Twenty-year: Dept. 001, D. Salvatierra Jr.; 015 E. W. Johns, J. F. Roberts; 059, P. Poche; 149, W. T. Bennett, Maud F. Greenhalgh, Nellie J. Karpinsky; 250, C. S. Hardisty, R. A. O'Connor; 401, A. O. Lampman, M. W. Nelson; 460, M. L. Stack; 744, S. Montoya; 758, C. B. Herndon, R. A. C. Perry; 761, M. R. Burris, H. Islava; 831, Violet Hodges; 833, M. M. Wood; 835, Ann C. Hamilton; 840, Ellen V. Tieszen; 950, A. Calman Jr.

Fifteen-year: Dept. 015, J. W. Kennamer, D. C. Maguire, N. L. Valentino; 016, Emma K. Chaykovsky; 031, J. W. Board; 058, W. F. Kemp; 059, F. F. Flores, A. E. Morrell; 101, Pauline S. Kelly; 140, Mary L. Stone; 141, R. Avitable; 149, Faith A. Hoag, Helen R. Miller; 170, R. J. Waller; 194, F. R. Fitzmaurice; 250, W. P. Brennan, W. H. Mabrey, N. Willingham; 400, V. R. Sampson; 420, C. C. Cope; 460, Marjorie H. McCarthy; 511, R. D. McLeod Jr.; 515, June E. Wallace; 526, Carole J. Clark; 563, J. R. Duffy; 578, R. D. Dickens; 587, J. E. Jensen; 756, B. E. Berry, H. P. Higdon; 780, Ann B. Clawson, Dorothy M. Kassman; 832, J. H. Jenkins, Irma M. Williamson; 840, I. W. McCall, A. L. Ratz; 985, Ora A. Trowbridge.

Ten-year: Dept. 001, H. E. Guy; 002, K. J. Newman; 015, C. M. Vandever; 027, K. A. Jenkins; 031, D. F. Sussek; 059, T. B. Burrows Jr., R. E. Rice; 115, Angie G. Valdez, R. W. Woodrey; 142, J. M. Farnsworth; 143, L. D. Graeff, Dorothy I. Shepherd; 149, F. J. Andolsek, B. H. Clark; 170, Eleanor L. Curtis; 250; W. W. Dover; 401, K. Jordan; 452, J. E. Rose; 516, C. N. DeMund; 519, Virginia Heydel; 524, Barbara L. Klopfer, Mary J. McGuire, Loletta B. Metzger, Lillie M. Turner; 550, A. C. Greeley; 584, G. A. Howell; 592, R. S. French; 597, J. Hughes; 717, E. A. Lynn; 763, G. H. Owen; 780, J. D. Cousins, Ilene M. Guzzardo, Camelia F. Hill, Eva I. Partusch, Lois Simmons, Evelyn K. Wallace; 833, Barbara J. Thomson; 840, Sally P. Tessin; 961, A. J. Vasques; 962, P. A. Schuh; 979, F. E. Berry, E. R. Poole, Thomas R. Stevenson; 985, B. D. Holstin.

STROMBERG-CARLSON

Fifteen-year: Dept. 8510, J. E. Weaver; 8511, D. E. Hollenbeck.

Ten-year: Dept. 8411, R. H. Sparks; 8570, L. E. Klepin.

Awards

CONVAIR

Employe Suggestion awards approved for the week ending Dec. 1.

Dept. 002-0, A. Stieringer; 015-0, J. R. Laccabue Sr., L. K. Lee, C. J. Popp; 016-0, M. G. Mercer; 019-0, G. F. Reutlinger; 022-0, O. W. Brotherton; 027-0, M. R. Brown, J. L. Killeaney, C. A. Krug, M. J. Lynn, Steve Persley, G. R. Simpson; 031-0, O. L. Johannsen, 059-0, P. C. C. DeBaca, V. L. Waitman; 142-1, W. A. Dershem, J. W. Goddard Jr.; 143-4, F. B. Shockley, C. L. Yelverton; 144-2, P. W. Haggard, Betty R. Hofer; 149-3, R. J. McLeod; 149-7, W. C. Bowen; 194-0, R. F. Whyte; 250-1, G. R. Bone, R. Whaley; 250-2, Roy B. Johnson, J. E. McGlynn; 250-3, W. A. Engelke, N. Thompson; 250-4, J. T. Todd; 400-6, D. M. Scannell; 519-0, G. P. Neely; 521-6, Katherine Inkel; 543-2, R. O. Nissen; 574-1, Albert Aron; 717-0, F. Lopez Jr.; 733-0, E. V. Gloudeman; 761-0, C. W. Neal (two awards); 810-1, J. W. Redfield; 820-0, T. E. Barker; 840-0, Bruno Cano; 985-4, D. L. Blanchard.

In-Plant Training

ORIENTATION

NEW EMPLOYES—Educational services staff.

Kearny Mesa: ext. 1931, Bldg. 17, Room 7, Monday, Jan. 8, 8 a.m.

Lindbergh Field: ext. 491, Bldg. 14 auditorium, Tuesday, Jan. 9, 8 a.m. and 4:30 p.m.

AF Plant 19, ext. 491 LF, Bldg. 3, 1st mezz., Col. B-14 conference room, Thursday, Dec. 14, 8 a.m.

CITY COLLEGE COURSES

Registration for four spring semester supervision courses begins Jan. 2. "Human Relations A" will be given at Lindbergh Field, Bldg. 14, Mondays, 4-7:30 p.m. Courses at Kearny Mesa Bldg. 17 will be "Advanced Industrial Economics," Mondays, 4:30-7:30 p.m.; "Human Relations B," Wednesdays, 4:30-7:30 p.m.; "An Introduction to Supervision," Wednesdays, 4:30-7:30 p.m. For information call David Chigos or Hal Rubin, ext. 1931 KM.

PROFESSIONAL/TECHNICAL

PROGRAMMED SELF STUDY—A limited number of programmed texts covering many subjects are available in the educational services office, Bldg. 17, Kearny Mesa. These may be checked out for home study. Educational services office hours are 8 a.m. to 5 p.m., ext. 1931 KM.

Deaths

CONVAIR

GREER—W. H., Dept. 985-4. Died Nov. 22. Survivors include his wife, Kay Renee.

Retirements

CONVAIR

BALDWIN—Lorum J., Dept. 049. Seniority date July 31, 1940, retired Nov. 30.

BOREK—Albert S., Dept. 836-1. Seniority date Oct. 27, 1950, retired Nov. 30.

BRASS—Peter T., Dept. 193-3. Seniority date Sept. 15, 1941, retired Nov. 30.

BRASS—Verna W., Dept. 191-0. Seniority date June 23, 1955, retired Nov. 30.

CEDERWALL—Helen A. C., Dept. 100-1. Seniority date June 22, 1942, retired Dec. 3.

FURTAK—Thomas F., Dept. 059-5. Seniority date Oct. 17, 1956, retired Nov. 30.

LEE—Robert F., Dept. 250-1. Seniority date Sept. 26, 1956, retired Nov. 20.

McFALL—James C., Dept. 193-1. Seniority date June 8, 1942, retired Nov. 30.

MOORE—Tom E., Dept. 250-3. Seniority date March 4, 1942, retired Nov. 27.

PERECKO—Julius J., Dept. 493-0. Seniority date July 14, 1958, retired Nov. 19.

REBSTOCK—Alice N., Dept. 850-1. Seniority date Feb. 13, 1957, retired Oct. 16.

ROBINSON—Paul W., Dept. 979-3. Seniority date July 7, 1965, retired Nov. 11.

SHACKLEFORD—Clayton W., Dept. 420-4. Seniority date Feb. 8, 1956, retired Oct. 16.

TAYLOR—Carroll W., Dept. 985-4. Seniority date Sept. 12, 1950, retired Nov. 30.

TEJADA—Armand C., Dept. 966-4. Seniority date March 3, 1952, retired Oct. 27.

TERRY—Roy C., Dept. 143-5. Seniority date Nov. 28, 1955, retired Nov. 30.

Personals

CONVAIR

Your kind expression of sympathy following the death of Robert C. Armstrong (retired 1959) is deeply appreciated and gratefully acknowledged.

Ruth Armstrong and family

* * *

The spray of glads and bronze chrysanthemums received at the death of my husband, Chester Yackels (retired 1961), was very lovely and greatly appreciated.

Mrs. Chester Yackels

Births

CONVAIR

SCOTT—Daughter, Della Paulette, 8 lbs. 2 oz., born Nov. 10 to Mr. and Mrs. C. W. Scott, Dept. 835-2.

General Dynamics News

Published by General Dynamics Corporation, One Rockefeller Plaza, New York, N. Y. 10020.

Convair division editorial offices: Kearny Mesa plant, Bldg. 8, Mail Zone 130-01, P.O. Box 1128, San Diego, Calif. 92112. Phone 277-8900, ext. 3322.

Lindbergh Field plant, Bldg. 5, Mail Zone 104-60, Phone 296-6611, ext. 1071. P.O. Box 1950, San Diego 92112.

Cafeterias to Serve Special Xmas Menu

"Christmas" dinners will be served by Convair division cafeterias during the lunch hour Dec. 21.

Ham will be the entree at Kearny Mesa for $1.10. Complete turkey dinner at LF will be $1.

Dedication of Facility Held

Industrialization holds the key to the future of the Navajo people, Tribal Chairman Raymond Nakai declared during dedication Nov. 14 of the General Dynamics Navajo Facility at Fort Defiance, Ariz.

Present for the ceremony were Algie A. Hendrix, Corporate vice president; C. F. Horne, Pomona division president; G. E. Sylvester, Pomona vice president; C. J. Jameson, facility manager; and Graham Holmes, director of Navajo area office, Bureau of Indian Affairs.

Tribal officials included Nakai, Vice Chairman Nelson Damon, who gave the invocation in both English and Navajo, Medicine Man Tom Wilson who presented the Navajo blessing ceremony for the new building.

Edward McCabe, director of the administrative division, was master of ceremonies and introduced additional guests. Attending were officials from the Bureau of Indian Affairs and other federal government agencies.

ASQC and ASNT Hold Joint Discussion

"Quality control procedures for advanced composites" was discussed by a technical panel at a joint meeting of the San Diego sections of the American Society for Quality Control (ASQC) and American Society for Nondestructive Testing (ASNT) Monday (Dec. 11) in La Mesa.

Members of the panel included Jack L. Christian, a staff scientist in Convair's Dept. 572-1, and Robert T. Anderson, a senior research engineer in Convair's Dept. 572-2.

J. Z. Mraz of the Defense Contract Administration Services plant representative's office at Convair is chairman of the ASQC section. J. D. Scherkenback, a senior quality control engineer in Convair Dept. 141-4, is chairman of the ASNT section.

Salvage Schedule

Next employes sales day at the Convair salvage yard at the Lindbergh Field plant, adjacent to gate 5, will be Saturday, Jan. 6. Hours are from 8 a.m. until noon.

Foundations For Mills Poured

Foundations for two huge numerical controlled plank mills, largest ever ordered by Convair, were poured late last month in Bldg. 1 at Lindbergh Field plant.

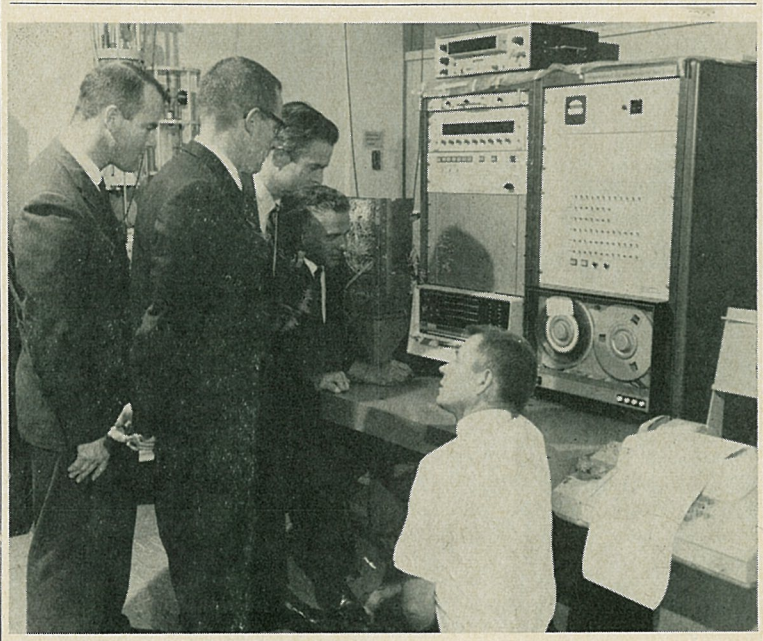
The milling machines will be used to machine planks for C5 empennages being built at Convair for Lockheed-Georgia Co. First machine is due in-plant the end of March and the second, the first part of July.

It took 590 yards of concrete for the foundations, which will have to support the heavy mills. Each weighs 352,000 pounds.

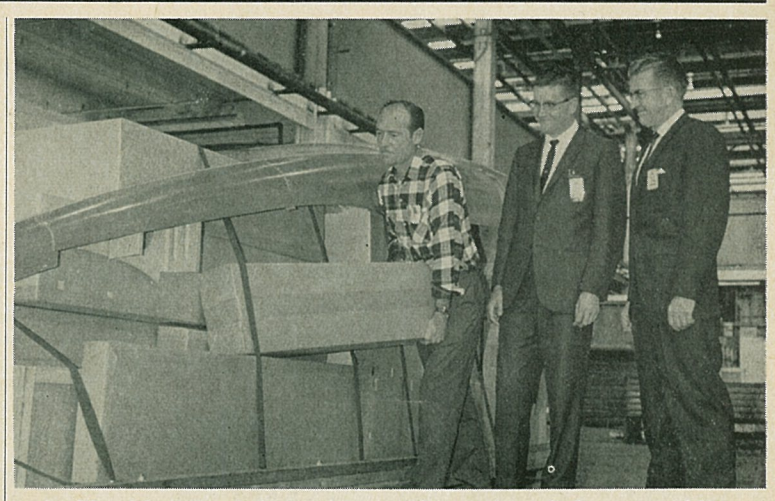
The concrete foundations are 29 ft. wide, 91 ft. long, and 6½ ft. deep. A crew from Nielsen Construction Co. poured the concrete in two days.

Plant engineering supervised the project with Bob Grimshaw as field engineer. Design was done in-house under Roger O'Connor.

Work to be done on the mills is now being contracted to outside vendors.



COAST GUARD VISITORS—Standing, from left, Lt. R. F. Melsheimer, Capt. P. S. Branson, Cdr. R. P. Dinsmore, examine oceanographic and meteorological equipment to be installed at Coast Guard shore station at Sandy Hook, N. J., for communication with Convair-developed buoy moored off shore at entrance to New York harbor. Equipment will process data from buoy. Convair men explaining console are, kneeling, Don Hall, senior design engineer, and, at far left, D. B. Dewey, Jr., Coast Guard buoy project manager at Convair.



LAST 600 KIT—Robert Hoover (far right) of Convair 600 program office and Keith Winslow, support contract representative, watch Fred Woods, shipping leadman, complete packaging of final Convair 600 modification kit delivered to Trans-Texas Airways. Last two of Trans-Texas' 25 kits left San Diego plant last part of November.

Mod Kit Order Completed For Trans-Texas Airways

Largest single segment of the Convair 600 program was completed last month with Convair division's delivery of the last of the modification kits ordered by Trans-Texas Airways, Inc.

Trans-Texas was the first airline to place an order for modification kits to update its fleet of Convair 240s with Rolls-Royce Dart 10 propjet engines at the time Convair initiated the program in the fall of 1964.

First of Trans-Texas' order of 25 kits was delivered in September of 1965. The airline put four of its converted craft, billed as Silver Cloud 600s, into service the first part of March, 1966, and praised the high reliability of the planes on their short-hop routes, requiring as many as 15 stops a day on scheduled flights.

Other lines now flying Convair 600s and 640s (modified 340/440s) include Central Airlines, Inc., also of Texas, which now has 11 Convair 600s in service. (Central was the first airline to inaugurate Convair 600 passenger service in late 1966.)

Caribbean Atlantic Airlines, Inc., has nine 600s on inter-island routes; Hawaiian Airlines flies seven 640s; Martin's Air Charter of The Netherlands, two 640s; and Pacific Western Airlines, Ltd., of Canada, four 640s. An executive craft was converted to the Convair 600 version for Thunderbird Airways, Inc., of New Jersey.

Trans-Texas was the only line to modify its own planes. Craft for the other airlines, with the exception of Martin's Air Charter, were updated at San Diego in the Convair Service Center. Martin's conversions were done by Aviolanda-Woensdrecht of Holland. Also, one of Pacific Western's was converted by Scottish Aviation.

More F-111 Assist Work Authorized For Convair

(Continued from Page 1)

The test stations will be used at F-111 squadron or wing bases to isolate faults, and to tune, calibrate, and adjust components of radar receiving sets and ECM systems of the F-111.

Design of the stations is the responsibility of Electronics division's Rochester operations. Electronics also will fabricate several of the stations at its Rochester plant.

Convair and Electronics each will have separate responsibility for operational planning, procurement, manufacturing, testing, sell-off and delivery for its own individual order.

F. J. Stewart is assistant program manager responsible for Convair's portion of the task. A resident liaison office will be established at Rochester to coordinate activities between Electronics division and Convair.

Design is now 40 per cent complete with final design releases expected around April of next year. Delivery of Convair's first unit is scheduled for Nov. 15, 1968, and the fifth in April of 1969.

Assembly will be accomplished by Convair's electronics manufacturing facility under Frank Kemper at the division's Kearny Mesa plant.

Each test station consists of four racks divided into two bays, as well as three storage cases, approximately 16 test adapters, and 58 accessories.

Basic racks, work surfaces, and storage cases will be purchased from outside sources. In-house tasks will include detail fabrication of printed circuit boards, electronic sub and final assembly and testing of printed circuit assemblies, wiring, cables, integrated circuits, microwave assemblies, RF assemblies, and filter assemblies.

Special test equipment also will be built in electronics manufacturing for in-process testing of the stations.

Atlas-Centaur 15 Will Boost Surveyor 7 For Moon Mission

(Continued from Page 1)

Surveyor 7 will carry both an alpha scattering experiment for soil analysis and a surface sampler "scoop" to dig, scrape and pick up soil.

The AC-15 launch with Atlas SLV-3C No. 5903 and Centaur 12D will mark the first launch by an SLV-3C booster from Complex 36-A at Cape Kennedy. The launch pad has been undergoing conversion and its umbilical tower extended to accommodate the longer vehicle.

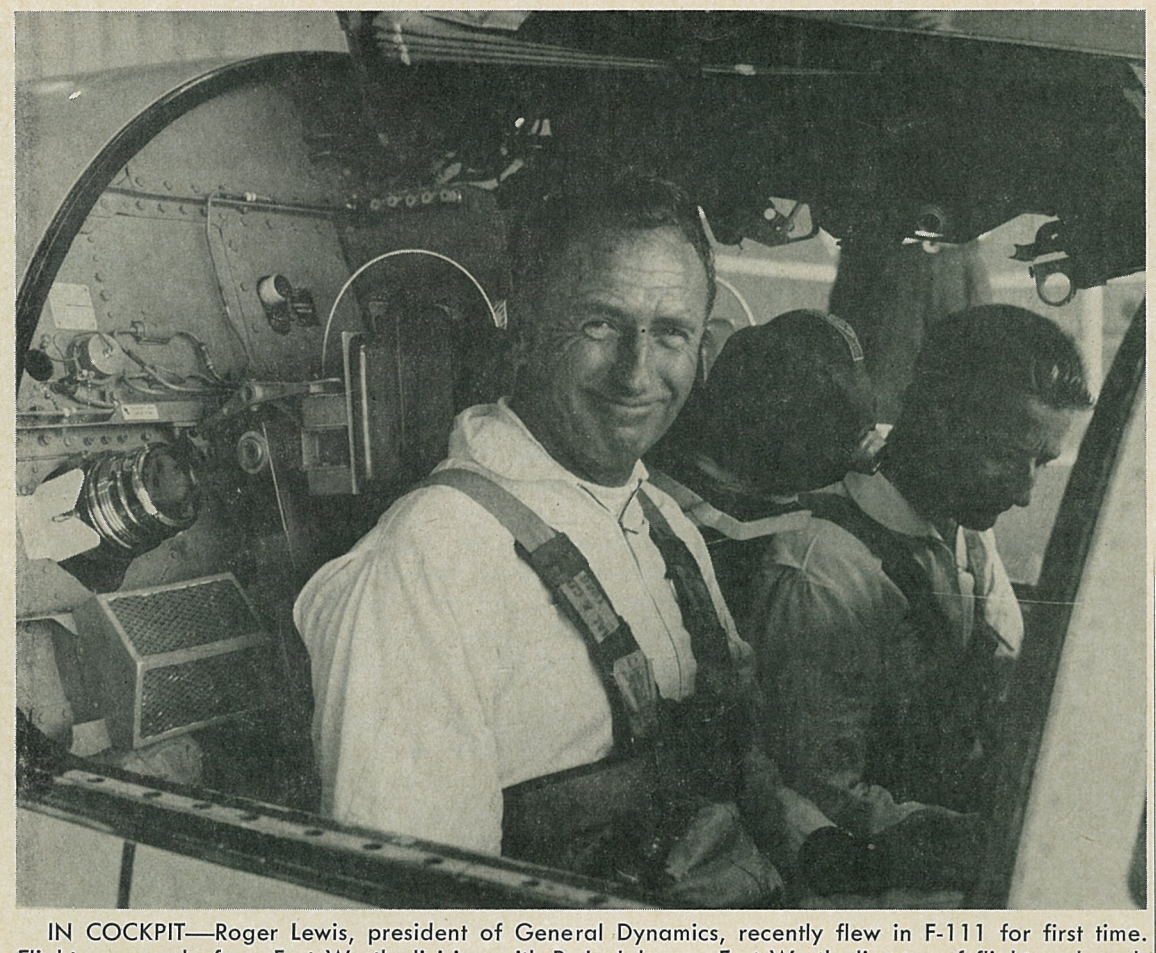
E. E. Barringer, AC-15 project engineer, and 26 other Convair launch vehicle programs personnel from Kearny Mesa will be at the Cape next week for equipment assessment and flight readiness review.

Other members of the team are R. H. Thomas, J. W. Swigart, W. D. Taylor, J. B. Jarman, A. G. Haury, T. M. McDowell, R. T. Kubota, A. F. Strubb, J. M. Rager, M. J. Debreceni, R. D. Lytwyn, Leroy White, E. H. Luke, J. E. Geil and Joe Saugier.

Also C. L. Rathbun, G. R. Jerahian, W. W. Deane, R. L. Cook, H. G. Yett, J. W. Taylor, C. C. Campbell Jr., D. E. Quinn, E. H. Christensen, A. W. Wiest and J. N. Brown.

SEMINAR VISITORS WILL TOUR CONVAIR

Thirty-five participants in an Agency for International Development midwinter leadership seminar are scheduled to visit Convair, Dec. 27.



IN COCKPIT—Roger Lewis, president of General Dynamics, recently flew in F-111 for first time. Flight was made from Fort Worth division with R. L. Johnson, Fort Worth director of flight and quality assurance, at controls. Aircraft's varied capabilities were demonstrated.

HOOKED UP—With wings extended virtually straight out, Mach 2.5 F-111A can slow to pace of prop-driven KC-97L.

Health, Safety Director Inspects GD Divisions

Dr. John P. McCann, Corporate director of health and safety, has conferred at Fort Worth, Electric Boat and Quincy divisions in the first of a series of inspections that ultimately will involve all major General Dynamics plants.

In the newly created position, Dr. McCann has overall responsibility for developing and administering policies and programs to achieve conditions of maximum health and safety for General Dynamics personnel and minimize lost time due to occupational and non-occupational accidents and illnesses.

While at Fort Worth, Dr. McCann conferred with Dr. J. K. Leverett, division chief physician, and Fred Temple, division chief safety engineer, and familiarized himself with health facilities and practices. He conferred similarly at EB with Dr. A. D. MacDougall, medical director, and Harold Morgan, chief safety engineer, and at Quincy with Dr. F. N. Manley, chief physician, and R. F. Dwyer, chief safety engineer.

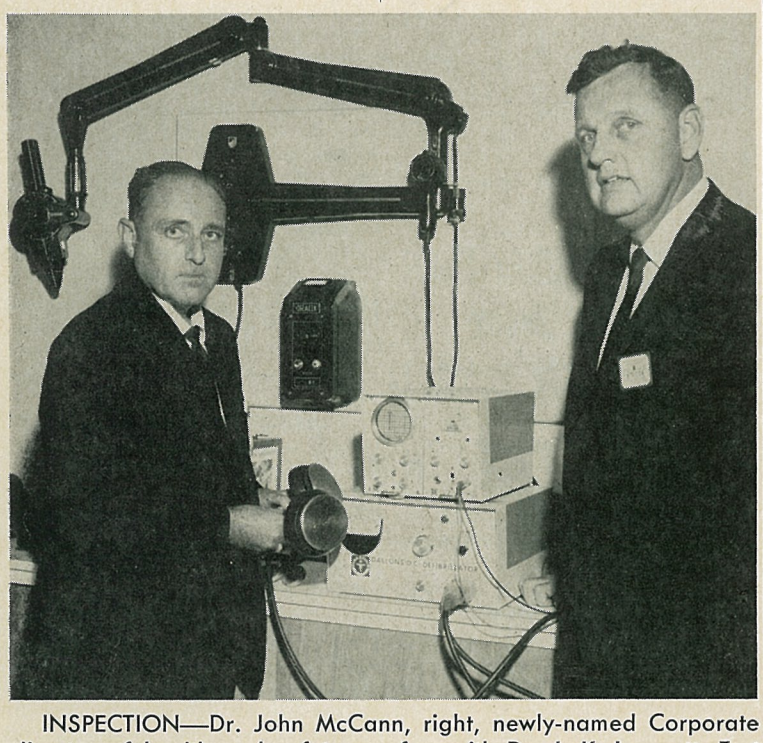
Among specific responsibilities, Dr. McCann will coordinate development of division accident prevention policies and programs; coordinate development of realistic and uniform minimum medical standards for specific positions; coordinate selection and training of top qualified medical personnel; review medical facilities and equipment to assure provision for adequate medical programs; develop safety programs, including monitoring of frequency, severity and other relevant accident statistics to identify unfavorable trends; institute education and training programs to make all General Dynamics personnel aware of their personal role in preventing accidents and assuring good health.

Formerly chief of aerospace medicine for Convair's life sciences department, Dr. McCann retired from the Air Force in 1966 following 24 service years as pilot and physician during which he held numerous clinical, research and administrative positions in internal and aerospace medicine. From 1961 until retirement as a colonel he was progressively Chief of Aerospace Medicine, Director of Professional Services and Deputy Surgeon Air Training, Randolph AFB, Texas. His education includes an M.D., 1949, Marquette University, Master's in Public Health, 1955, Harvard University. He is a fellow of the American College of Physicians.

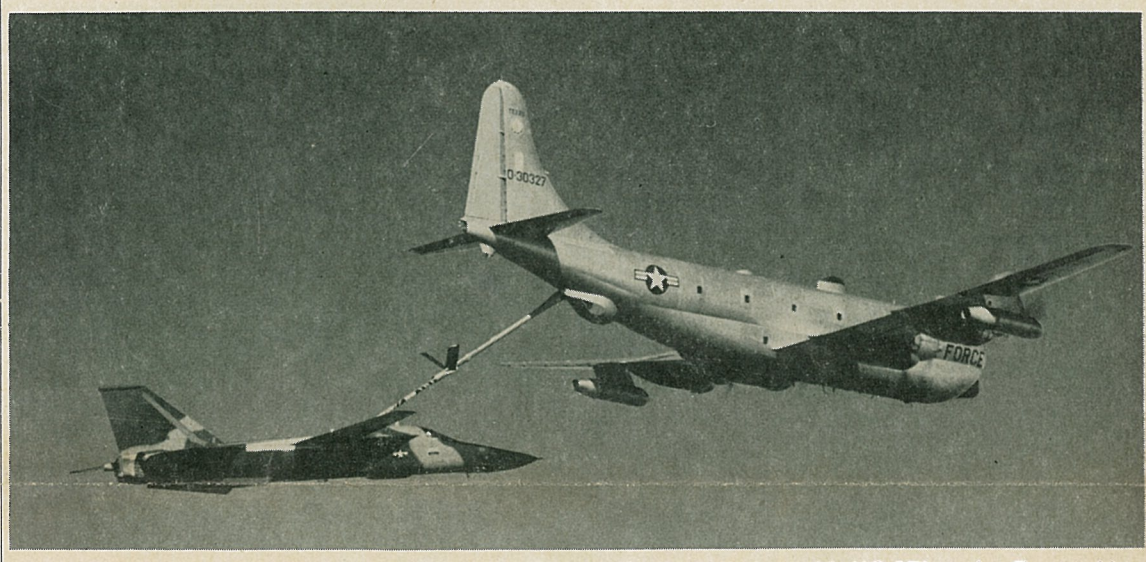
Dr. McCann reports to Algie A. Hendrix, Corporate vice president.

ELECTRONIC ASSN. ELECTS D. C. PRIM

D. C. Prim, general manager of the Electronics division's San Diego operations, has been elected vice president of the Western Electronic Manufacturers Association.



INSPECTION—Dr. John McCann, right, newly-named Corporate director of health and safety, confers with Dr. J. K. Leverett, Fort Worth division chief physician, during inspection tour.



HAVE A DRINK—F-111A successfully carries out refueling mission with KC-97L under Texas skies.

Kalitinsky Named To NASA Study on Chemical Rockets

Andrew Kalitinsky, director of engineering for Convair launch vehicle programs, is serving as an adviser to a NASA internal committee on design criteria for chemical propulsion at the request of Dr. Abe Silverstein, NASA Lewis Research Center director.

The NASA committee will define critical problems and establish design criteria to be published as guides for designers of chemical rockets.

Kalitinsky has been with Convair since 1961 and formerly served as director of unmanned spacecraft and director of NOVA launch vehicle feasibility studies for the division. He previously served six years at Fort Worth as nuclear aircraft program director.

F-111 Ability to Fly Slow Useful in Air Refueling

One of the oldest tankers in the inventory can be used to refuel the nation's newest jet fighter-bomber.

The point was demonstrated several times recently when an F-111A, then an FB-111A—the bomber version—took on fuel from a KC-97L.

"This adds still another dimension to the F-111's versatility," said F. L. O'Brien of F-111 flight test. "Most bombers, including the B-58, are simply too fast for the relatively slow KC-97. Normally, the B-52 can't use this prop-driven tanker either.

"But the F-111, with its variable sweep-wing capability, can fly as slow as necessary during refueling."

First meeting of the F-111A and the KC-97L, from the Texas Air National Guard's 136th Air Refueling Wing Group at Hensley Field in Dallas, took place between Austin and Lufkin.

After this successful maneuver, a second refueling mission between the two planes was carried out over the Gulf of Mexico.

F-111 crewmen on the first flight were Majors Thomas Wheeler and John Barrett. They said the mission was carried out "without a hitch."

They were "surprised and pleased with the way the refueling was handled and with the compatibility of the two aircraft."

The initial refueling was completed at 25,000 feet. In just four minutes, the F-111A gulped 21,000 pounds of jet fuel at the rate of about 5,000 pounds a minute.

National Guard leaders said compatibility of the F-111 and the KC-97L would assure continued use of the tankers in the future.

Several days after the F-111A refuelings, an FB-111A bomber version of the variable-wing aircraft carried out a refueling mission with the older tanker.

Val Prahl and O. D. Lively were aboard the bomber version during the operation.

People Mobility

Appointments and Transfers

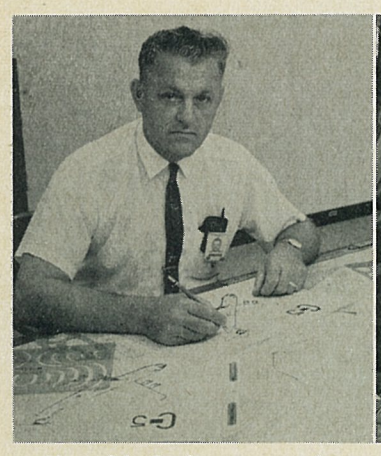
(Following are recent personnel transfers from within General Dynamics. In parentheses are dates when individuals joined the Company.)

HENRY J. EIDE (1951) from Convair division to Electric Boat; **RICHARD C. MYERS** (1967) from Convair to Electronics, San Diego as engineer; **BERNARD A. BLASZKOWSKI** (1960) from Convair to Electric Boat; **JOSEPH L. HALL** (1951) from Convair to senior field engineer, Electronics, San Diego; **DUANE B. CARSON** (1956) from Convair to Electronics, San Diego as senior design assurance engineer; **LEON D. BROWN JR.** (1941) from Convair to senior design engineer, Pomona; **HARRY C. CALHOUN** (1967) from Convair to Electronics, San Diego as associate engineer; **COLIN C. WARE** (1965) from Stromberg-Carlson, Rochester to senior engineer, Electronics, Rochester; **GEORGE A. REINHARDT** (1943) from Stromberg-Carlson, Rochester to Electronics, Rochester; **MARTIN A. STUHLER** (1965) from Convair to manufacturing analyst, Stromberg-Carlson Data Products.

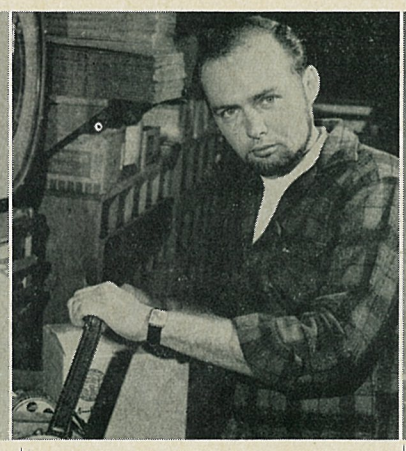
Visiting Physicians Briefed on Convair

Twenty-two Army and Air Force physicians from the aerospace medicine residency program at the USAF School of Aerospace Medicine, Brooks AFB, Tex., visited Convair's Kearny Mesa plant Dec. 4 for a briefing on the division's organization and products and life sciences programs.

The group also toured the division's life sciences, space sciences, information sciences and factory areas.

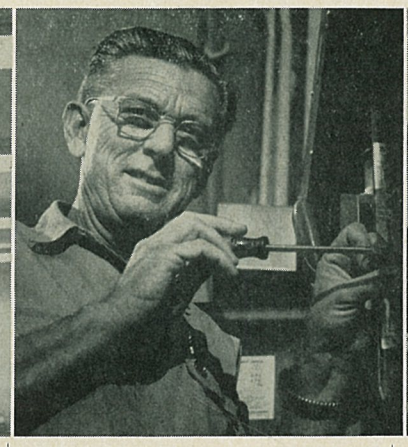


Morrel L. Parker, an engineering illustrator in Dept. 566-3 at Kearny Mesa, has had 25 years experience as a technical artist and publications editor including five years with Convair and five with General Atomic. He recently has been working on C-5 electrical harness structures drawings. He and his wife, Evelyn, live in the Mt. Helix area and have two sons. Parker is a member of the CRA Rockhounds, plays the violin and Hammond organ. He and his wife are active in church work. And, just to fill any other spare moments, Parker likes to bowl and go fishing.



Eldon Settlemyre, a material processor for Dept. 985-3 at Vandenberg AFB, was snapped taping a box of material for outgoing shipment. Parts of all sizes and shapes are packaged for shipment. Aluminum foil and other materials are used for "preserve" packaging of some parts for long-term storage. Settlemyre has been with Convair six and a half years and before that worked as a construction carpenter in Riverside. He lives in Lompoc and enjoys playing in local pool tournaments. For outside recreation, he likes to boat and fish at Lake Cachuma.

Polly Russell, cashier and travel reservationist at Stromberg-Carlson Data Products, is an ardent bowler on the Frontier Lanes Thursday night league. Her husband, Bill, keeps score! Polly joined the Company at Convair in 1954 as an audit clerk in accounts payable; worked at Electronics-SD in the same capacity before going to S-C in 1964. She helps her husband with his accounting business, especially during the rush months of income tax return preparation. They live in the State College area. Their son and daughter both work for the SD Gas and Electric Co.



Joe Kocurek, Lindbergh Field plant electrician, is a musician on the side. He has built two electric guitars and likes to twang out Western music on them. A native of Texas, he came to San Diego in 1941 and went to work for Convair. He was laid off in the low times of 1945 but was back on the payroll the next year. Since then he has been one of the construction electricians who wires in new equipment and rewires during rehab projects at Lindbergh Field plant. He and his wife, Leona, make their home in El Cajon. Their four children are married and away from home.

Jane Peloquin, material records auditor in Electronics-SD material control, maintains the material order files, among her other duties. She joined Convair in 1956 as a material record clerk and transferred to Electronics-SD when that operation was formed in 1962. Jane and husband, Bill, spend most of their spare time landscaping, planting, and taking care of their 220-ft. lot in North Clairemont. Their daughter Susan, 17, a Madison High senior, is the only one of their four children still at home. Their twin girls, Sharon and Sandra, are both married.

Con-Trib Approves $11,300 Gifts For 10 Service Organizations

Members of the Convair Employes' Con-Trib-Club committee in recent meetings allocated $11,300 to 10 community service organizations.

A total of $6,300 was granted to six agencies in the Vandenberg AFB area on recommendation of the local employes' advisory committee. Included was $3,000 for the Santa Maria Valley United Fund, $2,000 for the Lompoc Valley United Fund, $500 for the Salvation Army Christmas appeal, $500 for the Salvation Army "Operation Big Brother," $200 for the Santa Maria Valley Boys' Club and $100 for the Lompoc Valley Boys' Club.

Other grants included $2,500 to the Salvation Army for its Christmas basket program for needy families in San Diego County, $1,000 for the Girls' Club of San Diego and $750 each to the South Bay Pioneers and the Crossroads Foundation for use in their alcoholism rehabilitation programs.

VANDENBERG GIFTS—Con-Trib-Club checks from Vandenberg AFB employes totaling $6,300 are shown by (clockwise from top left) Louise Deveny, Carol Dye, Diane Kendall, Pat Malone, Ray Forrest and Lucy Mahoney. Grants were for United Fund, Salvation Army and Boys' Club organizations of Northern Santa Barbara County.

Seminar Attended By 135 Supervisors

A total of 135 supervisors from 44 Convair division departments attended an all-day "motivation and discipline seminar" Dec. 2 in the Kearny Mesa plant cafeteria.

The seminar was presented by Practical Management Associates of Woodland Hills, Calif., and was sponsored by Convair's educational services section as part of the division's Management Upgrade program.

Emphasis was placed on motivation of employes through recognition, and removal of psychological and work barriers.

A similar seminar had been held previously at Convair's Lindbergh Field plant.

Material Collecting Needy Family Gifts For Christmastime

Material department at Lindbergh Field plant is conducting a drive for gifts to make Christmas a happier occasion for two needy families.

The two families have a total of 17 children, seven girls and 10 boys, ranging in age from 14 to a few months.

Two large boxes have been placed in Bldg. 5 lobby for collection of toys and staple food items. Toys should be marked for boy or girl and age.

Cash contributions will be used to buy turkeys and gift certificates for clothing.

All donations should be made by this Friday, Dec. 15. Cash should be given to Herb Billings, Doris Parker, or Walt Robinson.

NASA Surveyor Program Manager Praises Centaur Accomplishments

Convair division's Centaur was praised by Benjamin Milwitzky, NASA Surveyor program manager, at the post-launch press conference at Cape Kennedy last month following successful launch of Surveyor 6 by Atlas-Centaur 14.

"In this moon business, there is so much interest in landing on the moon and the spectacle of that part of the flight that we sometimes forget the very remarkable performance we have gotten out of the Centaur," Milwitzky told newsmen.

"I think it is only just and fair that we here acknowledge this, and say what a remarkable job I think the Centaur people have done," he added. "This includes the unmanned launch operations directorate here at the Cape, the Centaur project office at Lewis, the program office at headquarters, and Convair.

"When I think back a few years to where we were in the development of a sophisticated machine like the Centaur, and see the performance we are getting out of it today, I think it is a very remarkable achievement.

Milwitzky, at a press conference at Jet Propulsion Laboratory following the successful landing of Surveyor 6, said the Surveyor program has "built a bridge to the moon for man" and has successfully completed all its requirements for validation of four possible Apollo astronaut landing sites.

Colorful Program Planned For Club

Convair Management Club members and their ladies will meet tomorrow evening, Dec. 14, in the International Room of El Cortez Hotel to see a colorful program presented by the Marine Corps Recruit Depot.

Speaker will be Maj. Gen. Lowell E. English, MCRD commander; the MCRD band will furnish music; and Marines will put on the Pageant of Flags marking historical highlights in the 190 years of the nation's existence.

Cocktail hour starts at 6:30 p.m.; dinner follows at 7:30.

Space programs under C. S. Ames is sponsoring.

Little Joe II Effort Earns Praise of NASA

The Convair team responsible for the Little Joe II launch vehicle has been praised by the director of NASA's Manned Spacecraft Center for the role it played in the country's manned space program.

In a letter to Jack L. Bowers, Convair division manager, Robert R. Gilruth, MSC director, said: "I would like to commend the Convair Project Team responsible for the design, development, and launch operations of the Little Joe II launch vehicle. They were an outstanding example of how the best interests of the nation's space program can be achieved by cooperation between Government and industry."

Little Joe II launch vehicles were used in a series of suborbital test flights of the Apollo spacecraft. Last launch in January of 1966 proofed the escape system for manned flights to the moon.

Convair received a contract from NASA this fall to maintain for a year the three vehicles not used in the Apollo test program, together with the launcher, ground support equipment, and tooling.

Convair's Little Joe II program was directed by J. B. Hurt as program manager.

Deactivated Atlas Missile Silo Will House Big Forming Machine

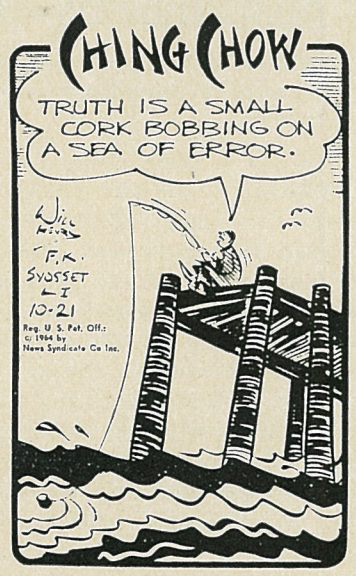
A deactivated Atlas F missile silo at Vandenberg AFB, constructed by Convair division several years ago and formerly used by the Strategic Air Command, is being converted to house the world's largest high-energy-rate forming machine.

A 10-ton ram being installed in the 174-foot shaft will be dropped 125 feet to impact work pieces on a 100-ton platen in the bottom of the silo. Much of the existing silo structure will serve as basic components for the forming machine.

Materials development officials for Battelle-Northwest, which will operate the new facility, said the impaction machine will have a capacity of about two million foot-pounds, more than four times greater than existing machines for high-energy-rate forming.

Failor on National Board of Mgt. Assn.

L. M. Failor, Fort Worth division chief of industrial relations at Edwards AFB, was elected to National Management Association's Board of Directors at the organization's 1967 national convention recently in Cleveland.



Dec. 22 Deadline For New Year's Circus

Next week is the deadline for purchasing tickets to the Moscow Circus' New Year's Day showing in the Sports Arena. Last day for buying tickets is Dec. 22.

Tickets at $1 discount are offered all GD people through auspices of the Convair Management Club.

Reserved seats are in the regular $3, 4, and $5 sections. There is no reduction in price on regular $2 seats.

Tickets are on sale at all employe services outlets at Convair, Stromberg-Carlson, and Electronics-SD facilities and by all Management Club Boosters.

NAVY OFFICERS INSPECT LABS

RAdm. H. D. Warden, commanding officer of the U.S. Naval Hospital in San Diego, and Capt. C. K. Holloway, executive officer, visited Convair's Kearny Mesa plant Dec. 4 for presentations on the division's life sciences and information sciences programs and a tour of life sciences laboratories.

Electronics-SD, Convair Earn Commendation

Electronics-SD and Convair personnel have been commended for a joint effort under which computer programming was developed for real-time data displays aboard the Apollo Instrumentation Ships.

Programming for raw data transmissions from the Apollo ships for real-time display at NASA Manned Space Flight Network ground stations was completed under a Navy contract. Subsequently, changes required for a real-time display on flight dynamics officer's (FDO) consoles aboard the instrumentation ships were completed under a separate NASA contract.

Don Putnam, manager of data systems for Electronics-SD, was in charge of the joint effort, conducted under auspices of Convair's research and information sciences Dept. 590-0.

Charles Gutzler of Convair's Dept. 591 was research group engineer for programming. Dr. Robert Leger, manager of Convair information systems, provided technical guidance. Lead design specialists were Clair Swarner for Convair and David Plutchak for Electronics-SD.

Calvin B. Chamberlain, an Electronics-SD senior research engineer, was aboard the USNS Vanguard, one of the instrumentation ships, during the Apollo AS-501 flight last month to provide support services.

Paul Brumberg, NASA Goddard Space Flight Center technical representative for the Apollo Instrumentation Ships (AIS) flight dynamics computer program, expressed appreciation for "the excellent cooperation and timely support" in a telegram to Electronics-SD and Convair.

"The overall success of the USNS Vanguard was made possible because of the personal commitments of your personnel associated with the conception and development of the operational AIS/FDO program and they should be commended for a job well done; for without this program there would have been no operational FDO-type program for mission support," he said.

Brumberg also expressed "personal appreciation" for Chamberlain's services aboard the Vanguard during the mission.

Material's Con-Trib Participation Upped

Revision of the number of personnel assigned to Convair division's material department during the recent Employes' Con-Trib-Club campaign resulted in the department achieving 98 per cent participation—rather than 93 per cent as previously reported.

The two-week campaign increased Con-Trib-Club participation by all division employes to 89 per cent (**GD/NEWS, Nov. 15**).

F-111 Status Report Movie Available

Latest film on the F-111, the F-111 Status Report, is available for showing to Convair groups in San Diego, as well as to outside organizations.

The 16-minute, color and sound movie highlights the progress being made in the F-111 flight-test program.

To arrange a showing, contact M. C. Tombler at ext. 1174, Lindbergh Field plant.

Tours of Hawaii Offered at Rate

CRA is offering 17-day escorted Hawaiian Island tours at $338 and $368 with DC-8 flights leaving Los Angeles every other Friday.

Both tour packages cover visits to Hawaii, Oahu, and Maui and a sightseeing flight over Molokai. The more expensive tour includes a visit to Kauai.

Descriptive brochures, including application forms, are available at all employe services outlets.

CRA Calendar

(For information on CRA activities call CRA headquarters, ext. 1111 Kearny Mesa. Deadline for next issue of GD/NEWS is Dec. 22. Call ext. 1071 LF or 3322 KM.)

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ADVENTURERS — Meeting Dec. 20, 7:30 p.m., CRA Clubhouse. Camping trip to El Golfo, Mexico, Dec. 30-Jan. 1.

BADMINTON — Play Mondays, 7-10 p.m., Federal Bldg., Balboa Park. Call Al Van Norman, ext. 1864 KM.

BICYCLE CLUB—25-mile Kearny Mesa ride Saturday, Dec. 16. Leave CRA Clubhouse 9 a.m. For information call John Gacho, ride leader, 278-0781.

BRIDGE—Play each Friday, 7:30 p.m., CRA Clubhouse.

CERAMICS — Meetings Tuesdays and Thursdays, 7-10 p.m., CRA Clubhouse.

CHESS—Play Wednesdays, 7:30 p.m., CRA Clubhouse.

CHORUS—Rehearsals open to GD employes and families each Tuesday, 7:30 p.m., CRA Clubhouse. Call Jim Pate, ext. 3034 KM; Jo Anne Bray, ext. 1091 LF; or Walt Minor, ext. 1111 after 4:30 p.m.

COINEERS — Meeting Dec. 20, 7:30 p.m., Convair cafeteria, Lindbergh Field.

FENCING—Workouts and instruction Fridays, 7:30-10:30 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Meeting Dec. 19.

GUN CLUB—Christmas trap and skeet shoot 9 a.m., Dec. 17. Free targets.

HEALTH CLUB—Open 9:30 a.m. to 10 p.m., Mondays through Fridays; 10 a.m. to 5 p.m., Saturdays. Call ext. 1111 KM.

ICE SKATING—GD family skate nights Thursdays, 6:15-7:45 p.m., Mission Valley Ice Arena.

JUNIOR SCIENCE — Workshop Dec. 15, 7:30 p.m., CRA Clubhouse.

RADIO CLUB—Meeting Dec. 21, 7:30 p.m., CRA Clubhouse.

RIDING CLUB—Christmas dinner, Campus Chuck Wagon, El Cajon Blvd., Dec. 16. Happy hour, 5:30; dinner, 6:30.

RIFLE CLUB—Senior shoot Dec. 20, 7:30 p.m.; Junior shoot Dec. 16, 1 p.m.; Gillespie Field Range.

ROCKHOUNDS—Christmas party tonight, Dec. 13, 7:30 p.m., CRA Clubhouse.

ROLLER SKATING—Free skate night Dec. 18, Skateland, Front & G Sts. Tickets at employe services.

SPORTS CAR CLUB—Meeting tonight, Dec. 13, 7:30 p.m., Convair executive dining room, Lindbergh Field.

SQUARE DANCING—Christmas party and potluck Dec. 16, San Marcos Barn. Beginners will meet with Dynamic Eights Dec. 21 and Jan. 4.

STAMP CLUB—Meeting Dec. 21, 7 p.m., CRA Clubhouse.

TOASTMASTERS—Convair Toastmasters No. 3745 meet each Wednesday, 4:30 p.m.; Dynamic Toastmasters No. 457, Thursdays, 5:15 p.m., CRA Clubhouse.

TOASTMISTRESS CLUB — Meeting Tuesday, Dec. 19, 7 a.m., executive dining room, Kearny Mesa.

Jodka's Team Wins Controller's Golf

John Jodka's team of five, all of the financial accounting department, swept the field at the sixth annual controller's golf tournament Nov. 24 over the Rancho de los Penasquitos course. A total of 102, including guests, took part.

Winning team members were Jodka, C. N. Crocker, H. E. Wilson, William McColley, and Robert Young. Financial accounting also topped last year's match, though with different team members.

Low individual scorers were Jodka, men's low gross; John Parry, low net. Ladies' low gross trophy went to Arlene Talmadge. Nadine Prior shot ladies' low net.

Verna Halloway of Dept. 191-0 had the dubious honor of shooting the highest score over 100—177—to win the consolation trophy.

Trophies to top team and individuals were handed out at the potluck following the tourney in the clubhouse.

Sq. Dancers to Hold Christmas Party

CRA Square Dancers will gather for a Christmas party and dance this coming Saturday evening, Dec. 16, at the San Marcos Barn.

The beginners class of 40 will join the Dynamic Eights intermediate and advanced dancers for the holiday affair. Clark Elliott will call.

CRA is furnishing entrees of barbecued ham and beef for the supper at 10 p.m. One dollar gifts will be exchanged.

Since the CRA Clubhouse will be closed during the holiday week the beginners instruction class will meet for two sessions with Dynamic Eights, Dec. 21 and Jan. 4.

Adventurers Plan Mexican Camping Trip

CRA Adventurers' families will spend the New Year's weekend camping and collecting fossils and petrified wood near the little fishing village of El Golfo on the Gulf of Mexico.

The campsite is about 250 miles from San Diego (six hours driving time) and signs will mark the route from the village. There is no water supply at the campsite. Jorge Zorrilla will be trip coordinator.

Plans for the camping trip will be discussed at the club's meeting at 7:30 p.m., Dec. 20, in the CRA Clubhouse. A Sierra Club film, "Seeing the Grand Canyon by Boat," also will be shown.

You can buy U. S. Savings Bonds regularly for as little as 50 cents a week.

Three Low Scorers Win Christmas Hams

Ralph Way, Ernie Damarus, and Len Therrien took home hams for shooting low net scores in their respective flights at this month's CRA links tourney at Chula Vista course, Dec. 2-3.

Way (Dept. 400) and Damarus, also Dept. 400, led their respective flights, A and B, with 68s. Therrien shot a 69 for first spot in Flight C.

Flight A runner-up was Lee Kite (Dept. 671) with a 73. Dick Torrance (Dept. 957) was second in Flight B, 72; and Joe White (Dept. 130-1) trailed Therrien in Flight C with a 70.

Al Reiter of Dept. 015 shot the longest drive and Stan Brown, also Dept. 015, had the highest score.

Dancers to Entertain Rockhounds Tonight

Cabrillo Folk Dancers of Balboa Park, directed by Vivian Woll of Convair, will entertain CRA Rockhounds at their annual Christmas party tonight, Dec. 13, at 7:30 p.m. in the CRA Clubhouse.

The young people in the troupe are Bob Brisbin, Patti Coe, Karl Kochishan, Joe Kraynok, Richard Lenyk, Karen Litner, Carrie and Mary Pelczar. They will perform Ukranian, Hungarian, German, Austrian and Russian, Romanian, and Israeli dances.

A gift exchange will be held during the evening. Gifts are limited to $1 and should be suitable for the same sex as the giver.

Targets To Be Free At Gillespie Field

CRA Gun Club will show its appreciation for the patronage of gun enthusiasts during the past year by throwing a big Christmas turkey shoot with targets for free this coming Sunday, Dec. 17, at the Gillespie Field range.

There will be somewhere around 100 prizes worth aiming at—turkeys, hams, hunting equipment, bourbon, beer, candy. And, the only charge will be the basic cost of the prizes, according to Commissioner Jack Swank.

The shoot will be open to all trap and skeet shooters. First targets will be thrown at 9 a.m.

Winsor to Preside Over Camera Club

Clark Winsor will head the CRA Camera Club for the 1968 term of office following election of officers last month.

Dorothy Mildice is newly-elected vice president and Chuck Harter, secretary-treasurer.

Officers will assume club reins at the January meeting.

Camera Club members held their annual dinner last Friday, Dec. 8, at the Islandia Hotel in Mission Bay. Usual monthly meeting will not be held.

Next regular meeting will be Jan. 21.

TOY TIME—Mrs. Robert Browning, left, charity chairman for Convair Wives Club, and Mrs. Henry Gaus, committee member, display some of dolls and other toys collected by club for Christmas giving.

Wives Collect Christmas Gifts For Children, Blind and Elderly

With a little money and a lot of ingenuity the Convair Wives have collected Christmas presents for at least four different San Diego organizations.

Mrs. Robert Browning has spearheaded the Christmas activity which will make the holidays brighter for others less fortunate.

A large carton of canned goods and staple items will go to the City Rescue Mission. A dozen lap robes and decorative yarn dogs will be given the elderly at the Edgemoor Geriatric Hospital at Santee.

A new tricycle and a wagon has been purchased for the Mentally Retarded Children's Home. Dolls, furnished by the Salvation Army, were dressed to give the children and bibs made.

Women at the Blind Recreation Center will receive yarn and crochet and knitting needles.

Proceeds from the club's special events and tours, totaling $92, were used for the Christmas charities.

Other members of Mrs. Browning's committee are Mrs. Henry Gaus and Mrs. Willard Ohland.

Teen-ager to Receive Memorial Trophy At Ride Club Dinner

Some teen-age member of the CRA Riding Club will be chosen as first winner of the Pop Beam Memorial Trophy to be awarded by the club to the most wholesome and cooperative junior member under 18.

The winner will be announced at the club's Christmas dinner this Saturday evening, Dec. 16, at the Campus Chuck Wagon, El Cajon Blvd.

The trophy commemorates the memory of "Pop" Beam, stepfather of the club's president, Scotty Payne, and long considered an honorary member of the Convair club. A horseman in his own right until well over 70, he devoted his energy to encouragement of young riders.

Overall high point club trophy for the year and six other high point trophies for various classes and age groups also will be presented.

Floyd Branscom will emcee the program following the 6:30 dinner. A 5:30 o'clock happy hour will start the evening.

Paula Smith is chairman of the holiday affair, assisted by Judy Watson and Jane Nash.

The club's Color Guard, Judy and Dave Watson, Conrad Nash, Gayle Dvoracek, rode in the La Jolla parade, Dec. 8.

Norwood and Cendali Win Tennis Doubles

Cecil Norwood and Ben Cendali edged John Cannau and Jack L. Bowers to win a round robin in the Convair Management Club's doubles tennis tournament Dec. 2 and 3 on CRA courts.

The CRA Tennis Club now has tennis balls available for practice use. The balls can be checked out at the Health Club in CRA Clubhouse.

Mgt. Club Dance Will Be Free

Convair Management Club members will dance free of charge at their holiday affair Saturday, Dec. 23.

The Christmas dance will be held this year in the CRA Clubhouse at Kearny Mesa. Dancing will be from 9 p.m. to 1 a.m. to the music of the Bob Bacchi Trio. Leslie Cheyne is vocalist with the group. Punch, also free, will be furnished by the club.

Tickets to the dance will be distributed to members by club Boosters.

Electronics' Annual Dance to be Dec. 23

Annual dinner-dance for all employes of Electronics division's San Diego operations will be sponsored by Electronics Management Club Dec. 23 at the Bahia Motor Hotel in Mission Bay.

Dinner will be at 8:30 p.m. in the hotel's Mission Bay Room. Buster Carlson's orchestra will play for dancing until 2 a.m. A raffle will be held during intermission.

Tickets are available from club Boosters within Electronics departments.

Heading the arrangements committee is George Leesch, manager of industrial relations. R. O. Williams is program chairman.

500 S-C Data Products Folk Expected To Attend Annual Dinner and Dance

Nearly 500 Stromberg-Carlson Data Products people and their guests are expected to celebrate the holiday season at the annual dinner-dance this Saturday, Dec. 16, at the Elk's Club in El Cajon.

Dinner will be served at 7:30 p.m. followed by dancing from 9 p.m. to 1 a.m. Bill McEvoy's Quartet will play.

A hundred dollars in cash will be given away by the Management Club to lucky ticket holders during the raffle for employes only. All attending will be eligible for door prizes.

Secretaries at both plants are selling tickets. Price is $1.50 apiece for employes and $3.25 for guests.

Arrangements are in charge of the recreation committee headed by Jack Swank. Members are Jim Pascarella, Nate Waddington, Trudy Rice, George Elmore and Carl Creager.

Electronics Factory Expansion Scheduled as Work Load Increases

(Continued from Page 1)

Classroom instruction is being conducted by Hal Rubin, Richard Forrest and W. F. Weidenfeller of Dept. 130-3 and includes familiarization with electronic components, production orders and specifications, assembly blueprints, wire codes, etc.

Relocation of other functions and consolidation and expansion of Dept. 780 functions in Bldg. 33 was planned by W. J. McNutt and J. P. White, Dept. 250-2 industrial engineers, under the direction of R. L. Blount, plant engineering supervisor, and will be completed by March at a cost of $32,000.

Military space programs (Dept. 115) offices are being moved to the fourth floor of Bldg. 3. Dept. 562, parts engineering and parts data center, Dept. 966, design review, and Dept. 964, configuration management and launch vehicle programs specifications, are being relocated in Bldg. 4. Dept. 566-3, drafting services, has been moved to Bldg. 51 at Lindbergh Field.

Special programs offices, General Electric Co. offices and several production control and production engineering functions are being relocated in Bldg. 33.

An F-111 ground support equipment program office under J. S. Berggren has been established in Bldg. 33. Eight stockrooms in Bldg. 33 are being consolidated and the Dept. 780 electronic harness manufacturing function will be moved from Bldg. 5 to Bldg. 33.

Sheet metal and machine shop operations in Bldg. 33 are being consolidated with Dept. 756 functions in Bldg. 5.

The electronics factory has been producing Standard Missile factory and depot acceptance test equipment for Pomona division for several months.

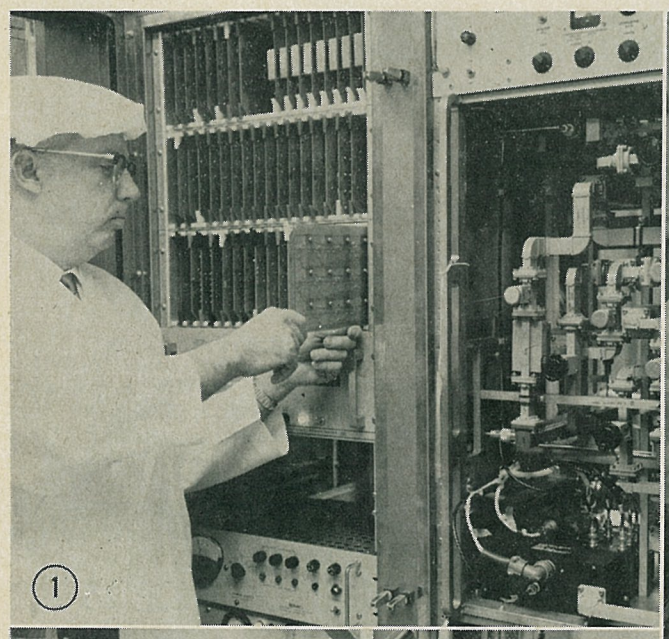
Jack L. Bowers, Convair general manager, recently received a letter of commendation from C. F. Horne, Pomona division president, following delivery of the first two units.

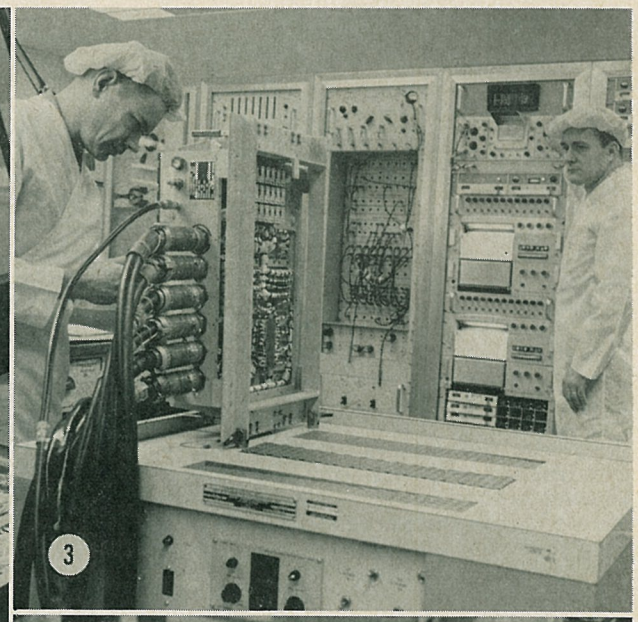
"It gives me great pleasure to extend my congratulations for delivering the first two units slightly ahead of schedule in spite of delays in procurement and last-minute engineering changes," he wrote.

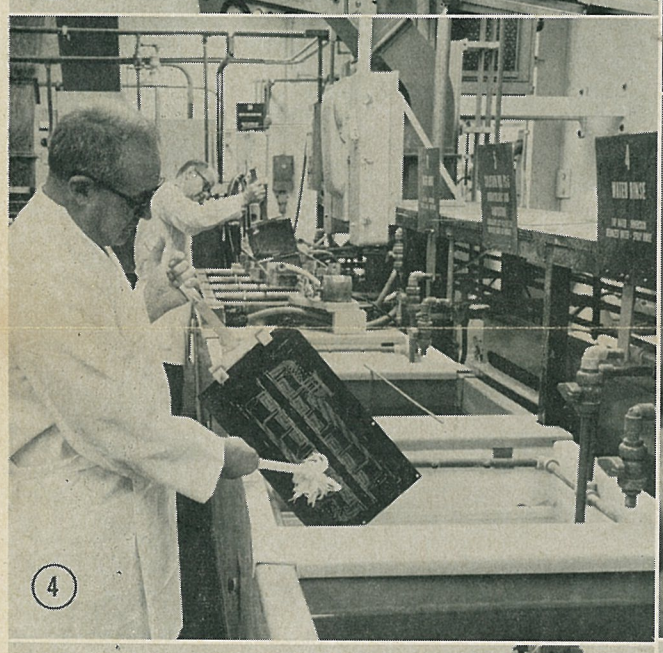
"Further, my quality assurance personnel tell me that not only are they pleased with the workmanship but so is the customer."

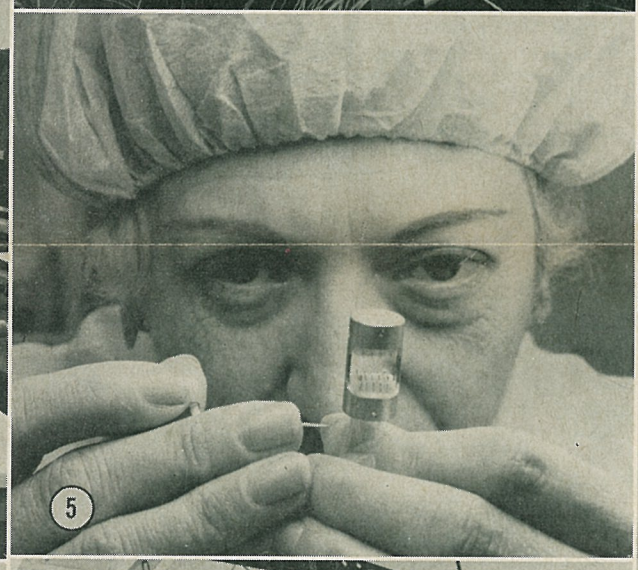
The electronics factory builds components for Atlas and Centaur vehicles, including autopilots, control and telemetry systems, propellant utilization equipment and transducers—as well as Orbital Vehicle One scientific satellites and electronics components for the Army's Range Measurement System-2.

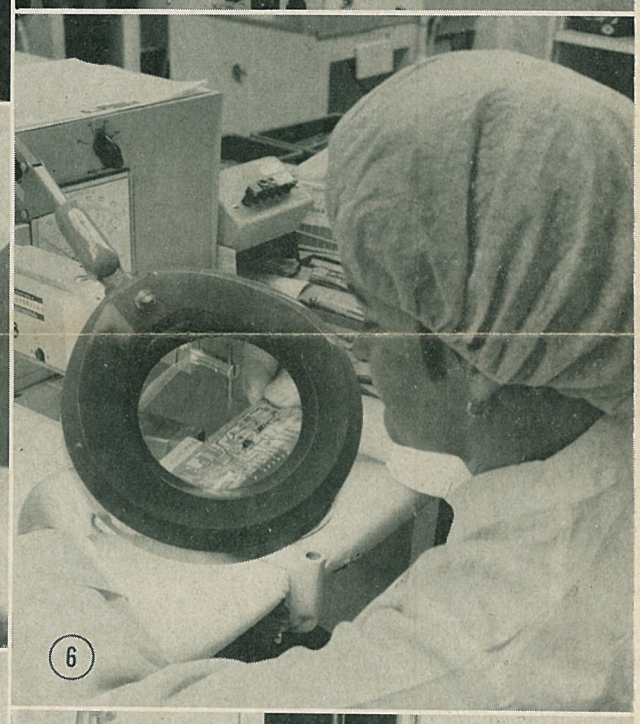
"We are looking for other electronics subcontracts from aircraft, missile and space contractors," Kemper said. "We are doing some subcontract work now for Gulf General Atomic, Ryan Aeronautical Co. and other local firms."

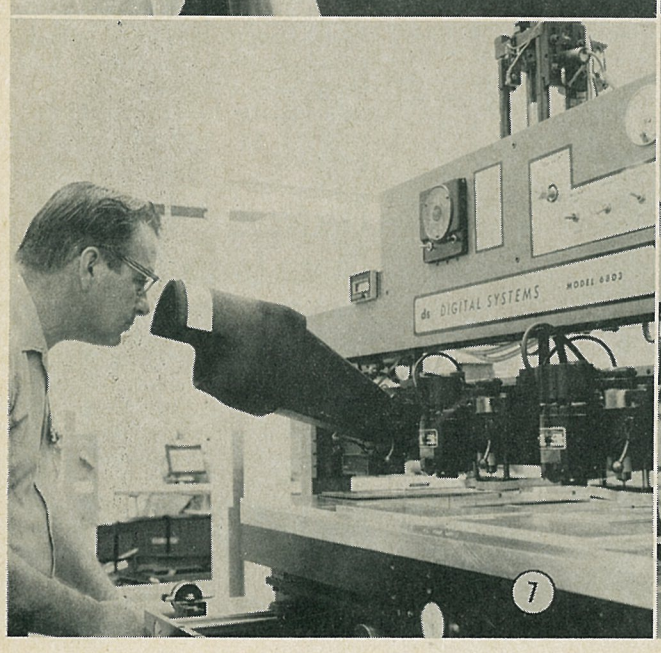


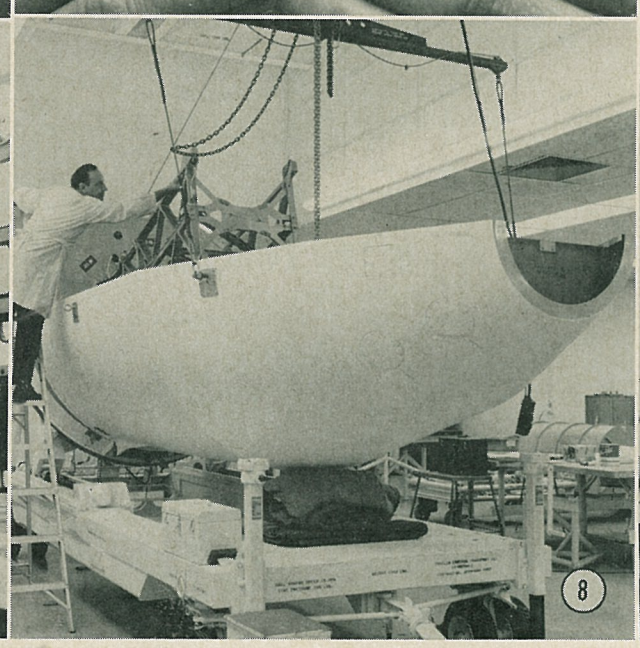


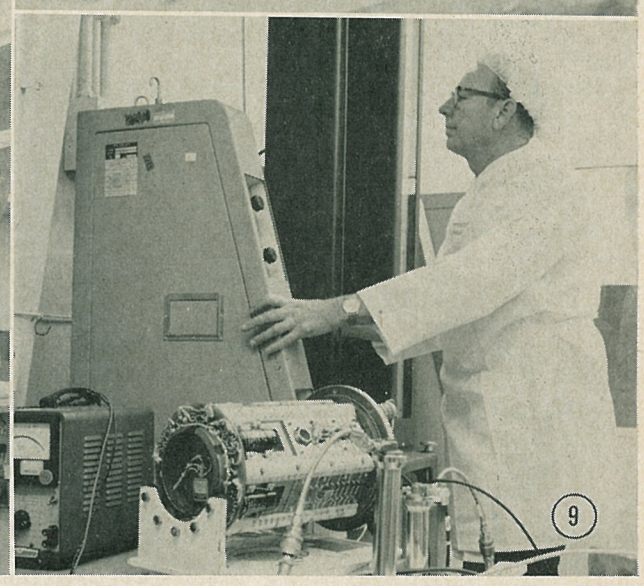












Convair division's electronics manufacturing organization at Kearny Mesa plant in San Diego is doubling its area and increasing its work force primarily to support Fort Worth division's F-111 and Pomona division's Standard Missile programs. Frank B. Kemper is electronics manufacturing factory manager.

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(1) Relay board in guidance test set group for Standard Missile depot test complex is checked by O. B. Aman, senior electronics engineer. Microwave deck is at right.

(2) Harness for Atlas advanced autopilot gyro package is routed by Ann Newlin, an electronics assembler mechanic.

(3) Atlas SLV-3A telemetry set is run through initial electrical test. C. H. Pedersen, senior electronics development test technician, left, makes voltage measurement while Albert Herter Jr., electronics development technician, operates telemetry set checkout console.

(4) F-111 printed circuit boards are plated by Charles M. Ortiz, left, and John Kelley, both precious metal platers.

(5) Fuel probe sensor for Atlas launch vehicle is prepared by Josephine Holley, electronics assembler. Platinum wire used in sensor is .001-inch in diameter.

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(6) Electronic module for Range Measurement System-2 built by Convair for U.S. Army is resistance welded by Clara Collins, electronics assembler.

(7) Numerical controlled drill press is used in preparation of circuit boards by M. T. Grove Jr., a numerical control sheet metal drill operator. Third drill head will be installed on drill press for increased production.

(8) Half of new heat shield for Convair-built Orbital Vehicle One satellites 14 and 15 is shown as W. C. Becker, Dept. 780-2 factory special assignments man, checks instrumentation accelerometer that will transmit data on OV1 vehicle ejection in flight.

(9) Launch vehicle propellant utilization system is checked by M. A. Gadeke, electronics test technician. Two manometers are calibrated to computer comparator in system.